SCIENCE

THE
HEMISTRY OF THE PHARMACOPŒIA
ACCORDING TO MODERN THEORIES.

BY JOHN CARGILL BROUGH.

III.

TERCHANGEABLE VALUES OF THE ELEMENTS—QUANTIVA-NCE. In the British Pharmacopœia, and in many standard orks on chemistry, the atomic weights of the elements are eorrectly called "equivalent weights." The atomic weights hich represent the smallest indivisible combining propor-ons of the elements, do not necessarily coincide with the eights of interchangeable or equivalent quantities. Thus e atom of bismuth, or the smallest proportion that is found enter into combination, is equivalent to 3 atoms of potas-im. For example, starting from phosphoric acid, $H_3 PO_4$, can procure by the substitution of metal for hydrogen PO_4, phosphate of potassium, or $Bi PO_4$, phosphate of bis-ith. Hence it is evident that the single atom of bismuth or. , equals in replaceable value three atoms of potassium or K_3 e power of displacing atoms is necessarily connected with power of fixing atoms, for when Bi takes the place of the drogen into the molecule $H_3 PO_4$, it obviously does the rk of H_3 in fixing the group of atoms, PO_4. The differ-ees in the replaceable value of the atoms of potassium and smuth may be plainly indicated by dashes placed to the ht of the symbols, thus, K', Bi'''. This mode of distin-ishing atoms of different values was proposed some years o by Dr. Odling, and is now generally adopted.

The vague term *atomicity* has been employed to denote laceable value or atom-fixing power, but Dr. Hofmann lately substituted for it the more appropriate expression *antivalence*, and has designated the elements *uni*valent, alent, *tri*valent, and *quadri*valent, according to the re-ective values of their atoms. In place of these designations, dern chemists often employ the corresponding names *nads*, *dyads*, *triads*, and *tetrads*.

The simplest combinations of hydrogen with univalent, alent, trivalent, and quadrivalent elements are repre-ted by the formulæ of the four typical hydrides, which e so fully described in the last section. Indicating the ntivalence of chlorine, oxygen, nitrogen, and carbon by hes, we see that single atoms of these elements re-ctively balance H, H_2, H_3, and H_4, in the four typical lecules—

$$H\,Cl' \qquad H_2\,O'' \qquad H_3\,N''' \qquad H_3\,C''''.$$

The differences between the elements as to their replaceable ue are well illustrated by the following symbolic equations resenting the decomposition of water, ammonia, and marsh respectively, by chlorine:—

$$\begin{array}{lcccccc} H_2O'' & + & 2\,Cl' & = & 2\,H\,Cl' & + & O'' \\ H_3N''' & + & 3\,Cl' & = & 3\,H\,Cl' & + & N''' \\ H_4C'''' & + & 4\,Cl' & = & 4\,H\,Cl' & + & C'''' \end{array}$$

ooking at these equations, we see that 2 atoms of the valent chlorine are requisite to expel from the water ecule its single atom of the bivalent oxygen; 3 to remove n the ammonia molecule its atom of trivalent nitrogen, 4 to replace in the marsh-gas molecule its atom of quad-lent carbon.

CLASSIFICATION OF THE ELEMENTS. In the Table given page 17 (See February number,) the elements mentioned he Pharmacopœia are classified according to their atomic ntivalence.

The *univalent elements* or *monads* are hydrogen (H = 1), rine (Cl = 35.5), bromine (Br = 80), iodine (I = 127), ium Li = 7), sodium (Na = 23), potassium (K = 39), and er (Ag. = 108). These elements usually combine to-ner in the proportion of one atom to one atom, forming such bodies as argentic chloride, AgCl, potassic iodide, KI, and sodic bromide, NaBr. But few compounds are known which contain more than two of these elements, unless an element of some other class be also present.

The *bivalent elements* or *dyads* are oxygen (O = 16), sulphur (S = 32), magnesium (Mg = 24), zinc (Zn = 65), calcium (Ca = 40), barium (Ba = 137), and lead (Pb = 207). They combine two or more together in various proportions. With the univalent elements they combine usually in the proportions of one atom to *two* atoms, forming such bodies as water, H_2O, sulphuretted hydrogen, H_2S, oxide of potassium, K_2O, hydrate of potassium, $K\,H\,O$, zinc chloride, $Zn\,Cl_2$, and magnesic bromide, $Mg\,Br_2$.

The *trivalent elements*, or *triads*, are nitrogen (N = 14), phosphorus (P = 31), arsenic (As = 75), antimony (Sb = 122), bismuth (Bi = 210), boron (B = 11), aluminium (Al = 27.5), and gold (Au = 196.5). These do not form many combinations among themselves, not containing any element belonging to another class. They combine with the univalent elements usually in the proportion of one atom to *three* atoms, to form such bodies as ammonia, $N\,H_3$, hydric phosphide, $P\,H_2$, and the chlorides of antimony and gold, $SbCl_3$, and $AuCl_3$.

The *quadrivalent elements*, or *tetrads*, carbon (C = 12), tin (Sn = 118), and platinum (Pt = 197), have the power of combining with the univalent elements in the proportion of one atom to *four* atoms, producing such bodies as marsh-gas. H_4C, stannic chloride, $SnCl_4$, and platinic chloride, $PtCl_4$.

Copper (Cu = 63.5), and mercury (Hg = 200) though usually classed with the dyads, form monochlorides comparable with argentic chloride, AgCl, as well as their normal dichlorides, $CuCl_2$ and $HgCl_2$. I have therefore placed them between the monads and dyads in my table. For a similar reason I have made another intermediate group of chromium (Cr = 52.5), manganese (Mn = 55), and iron (Fe = 56).

This exposition of the general principles of the new chemical philosophy need not be extended at present. I have said enough by way of introduction to my analysis of the Pharmacopœia, which will be commenced in the next article.

SOCIETY OF ARTS.—CANTOR LECTURES.

DR. F. Crace Calvert has just commenced a course of lectures "On the Synthesis and production of Organic Substances by Artificial means, and the applications which some of them receive in Manufactures." The following is the syllabus of the course:—

LECTURE I.—FRIDAY, APRIL 13TH.

"ON THE SYNTHESIS OF ORGANIC SUBSTANCES."

The direct formation of *acetylene* (the most illuminating compound of coal gas), of *formic acid* (the acid of ants), and of *alcohol* (spirits of wine) from mineral compounds. The transformation of *acetylene* into *olefiant* gas, of *formic acid* into *marsh gas* (fire-damp), of *alcohol* into *acetic* acid, and of these substances again into *benzol*, *phenol*, and *naphthalin* (products obtained from coal tar), and of *marsh gas* into *acetylene* and *benzol*, *etc*.

LECTURE II.—FRIDAY, APRIL 20TH.

"ON THE TRANSFORMATION OF NEUTRAL SUBSTANCES."

On the transformation of *starch* into *cane* and *grape sugars*, and also *pectic acid* (with remarks on the ripening of fruits and the production of jellies). On the transformation of *sugar* into *alcohol*, *ether*, *aldehyde*, *acetic*, *formic*, *prussic*, *oxalic*, and *butyric acids* (the acid of rancid butter), and also the conversion of *sugar* into *mannite* (obtained also from manna), and into *lactic acid* (acid existing in the blood and flesh of animals, and also in sour milk).

LECTURE III.—FRIDAY, APRIL 27TH.

"ON THE TRANSFORMATION OF ORGANIC ACIDS AND ANIMAL SUBSTANCES."

The artificial production of *benzoic acid* (found in benzoin resin) from the essence of *bitter almonds* and from *coal tar* products, and its conversion into *hippuric acid* (found in the secretion of herbivorous animals); of *tartaric acid* (the acid characterising cream of tartar), from *sugar of milk* and from *succinic acid* (the acid obtainable from amber), and its decomposition into *oxalic* and *acetic* acids—On the transformation of *citric acid* (the acid of lemons and oranges) into *aconitic acid* (found in wolfsbane)—On the transformation of *malic acid* (which characterises the acid flavour of green gooseberries, apples, and rhubarb) into *fumaric acid* (the acid of common fumitory) and also into *equisetic acid* (the acid found in the marsh horsetail), and, lastly, into *asparagine* (the body found in asparagus and potatoes)—On the transformation of *uric*, *cyanuric*, and *cyanic* acids into *allantoin* (the substance found in the allantoid fluid of cows) On the artificial production of *urea* (a substance which characterises the liquid secretions of man and of many other animals).

Lecture IV.—Friday, May 4th.

"On the Artificial Production of Aromatic Substances."

On the transformation of *salicine* (the bitter principle of the willow and poplar) into the essential oil of *meadowsweet*, *coumarin*, and of the *tonquin-bean*—On *salycilic acid* and the artificial production of the fragrant essential oil of the *wintergreen*, or *gaultheria*—On the transformation of *indigo*, the *oil of potatoes*, and that of *camomile* into *valerianic acid* (the acid which characterises the odour of valerian-root; the berries of the common guelder-rose; the oil of the fish porpoise, and of certain kinds of cheese)—On the conversion of *essence of turpentine* into *camphor*; of the essential oil of *mustard* into that of *garlic, etc.*

[We intend to give a brief notice of these lectures in our next.]

UTILIZATION OF TOWN SEWAGE.

A long paper "On the Composition, Value, and Utilization of Town Sewage," by Mr. J. B. Lawes, and Dr. J. H. Gilbert, is printed in the *Journal of the Chemical Society*. The practical conclusions deducible from the experiments and observations described are thus briefly stated:—

1. It is only by a liberal use of water that the refuse matters of large populations can be removed from their dwellings without nuisance and injury to health.

2. That the discharge of town sewage into rivers renders them unfit as a water supply to other towns, is destructive of their fish, causes deposits which injure their channels, gives rise to emanations which are injurious to health, is a great waste of manurial matter, and should not be permitted.

3. That the proper mode of both utilizing and purifying sewage is to apply it to land.

4. That, considering the great dilution of town sewage, its constant daily supply at all seasons, its greater amount in wet weather when the land can least bear, or least requires more water, and the cost of distribution, it is best fitted for application to grass, which alone can receive it the year round. It may, however, be occasionally applied with advantage to other crops within easy reach of the line or area laid down for the continuous application to grass.

5. That, having regard both to urban and rural interests an application of about 5,000 tons of sewage per acre per annum, to meadow or Italian rye-grass, would probably, in the majority of cases, prove to be the most profitable mode of utilization, though the quantity would have to be reduced, provided experience showed that the water was not sufficiently purified; and it is pretty certain that the farmer would not pay ¾d., and it is even very doubtful whether he could afford to pay ½d. per ton, the year round, for sewage of the average strength of that of the Metropolis (excluding storm-water) delivered on his land.

6. That the direct result of the general application of town sewage to grass land would be an enormous increase in the production of milk, butter, cheese, and meat; whilst, by the consumption of the grass, a large amount of solid manure, applicable to arable land and to crops generally, would be produced.

7. That the cost or profit to a town of arrangements for the removal and utilization of its sewage must vary very greatly, according to its position, and to the character and levels of the land to be irrigated. Where the sewage can be conveyed by gravitation, and a sufficient tract of suitable land is available, the town may realize a profit; but under contrary conditions, it may have to submit to a pecuniary sacrifice to secure the necessary sanitary advantages.

DR. PERCY ON THE VENTILATION C
HOUSES OF PARLIAMENT.

Dr. Percy has lately prepared a most interesting
the supply of air to the two Houses of Parliam
system of ventilation adopted is that of exhausti
being put in motion by means of heat applied b
in great upcast shafts, the two chief being in the Vict
and the Clock Tower. Go under ground, and
something like a rabbit warren. Under as well
ground there are hundreds of air courses; some for
cold air, others for supplying warm air, others fo
off vitiated air. There are in this great palace st
of which the aggregate length is about 15 miles.
stop-cocks and valves connected with these pip
supposed that no man living knows all these w
and smoke; but three gentlemen have now been
at work making a plan of them. Taking the Hou
longest, we learn that the air for the House of C
admitted from the Star-court and the Commons-
strained through gauze, and then warmed when n
Gurney's batteries; after this it ascends through t
the House. Dr. Percy notices the difficulty of s
satisfying all persons, members young and old,
have been walking and those who have been sit
who have dined and those who are hungry,
practise cold ablutions and those who are not so f
water. Some persons still think there is nothing
windows in the summer; but Dr. Percy says it
that in the House of Commons this diminishes th
of air which ascends through the House, and gene
the temperature several degrees. When Mr.
brought in his Franchise Bill, the quantity of ai
passed through the House while he spoke average
9,000,000 and 10,000,000 gallons an hour. The
fresh air which a few years ago was considered s
now regarded as wholly inadequate. It is
desirable to supply about 2,000ft. per man per hou
selecting the place from which the air is drawn i
very important. One of the Commons' inlets for
to the entrance to the Ladies' Gallery, and, notwi
all care, the drawing up of carriages will occasio
a supply of air with a little taint of the stable-
person walks through the Commons-court sm
odour is immediately perceived near the Speaker's
has been difficult also to keep out the smell of th
when its windows are open. But as defects are
they are remedied as far as possible. Occasionally
weather draughts are complained of, but preca
taken to render the velocity of the air in the
uniform as possible. In the House of Commons th
light is supplied from the chamber above the
which about 1,000ft. of gas are consumed per h
evening sittings; none of the products of combus
into the House. Until recently there was ve
danger from the exposure of woodwork in this
heat. The late Mr. Braidwood considered that
eight or ten years' exposure to heat not much exc
of boiling water, timber is brought into such a con
something like spontaneous combustion takes p
late Captain Fowke inspected the roof one night la
and strongly expressed his belief of the dang
remarking that throughout the building he had n
greater mixture of caution and carelessness in th
Attention had already been given to this dange
and a very large quantity of wood has been re
sheet-iron substituted. A fire in the ceiling is
unlikely, and would probably be immediately ex
There is now perfect control over the air in every
house; but some of the committee-rooms of b
greatly need better ventilation, and the improve
only a trifling outlay. Apprehensions were a
expressed of danger from the steam boilers; bu
inspected three times every year by skilful engine
by the Manchester Association for the Preventio
boiler Explosions, and all the improvements
suggest are adopted. They are pronounced perf
and there is not a boiler under either House.
added that in the whole Palace, including the Sp
other official residences, Westminster-hall, an
courts, there are more than 10,000 gas jets.

VARIA.

Dr. Richardson's simple and effectual method of producing *ocal* anæsthesia is coming into general use. Insensibility in ny part of the body is produced by projecting on the part finely-divided spray of pure and highly-rectified ether. he *Lancet* has recorded several operations in which this nethod has been successfully employed.

The Abbé Moigno has issued a French translation of Proessor Tyndall's discourse on "Radiation," which constituted he Rede Lecture of last year, and of Dr. Hofmann's lecture n the "Combining Power of Atoms," delivered about a year ince at the Royal Institution before the Prince of Wales.

Fresh sources have been discovered of the new metal, ndium. Professor Schrötter communicates to the Vienna cademy that Dr. Kachler, a pupil of his, has found it in ne zinc blende of Schönfield, near Schlaggenwald, where nis mineral occurs associated with tin ore and other minerals 1 a bed of steatite, in such quantity that a few grammes of nis mineral yield an appreciable amount of this substance. he blende is roasted, and then dissolved in sulphuric acid.)n treating this solution with metallic zinc, the indium and ome traces of other metals are precipitated, from which it is fterwards separated.

At a recent meeting of the Chemical Society, Dr. Frankland ave the results of his analyses of the drinking waters of ondon during the several months of the year, the said invesgation having been made at the request of the Registrareneral. Dr. Frankland discovered that the amount of solid npurities in London river water is always greatest in wet eather, also that the organic matter it contains is greatly creased during rain. The water was purest during the long rought of last summer, and most contaminated during the infall in the latter part of October. This increase in rganic matter he attributes chiefly to the flushing of the ewers of those towns which drain into the Thames above eddington Lock, and in the case of the New River and the ea to the flow of rain water over the highly-manured fields.

The Committee of the Botanical Congress to be held in lay next, in connection with the International Horticultural xhibition, and under the presidency of Professor A. De andolle, comprises the names of James Bateman, Professor abington, W. Baxter, J. J. Bennett, Rev. M. J. Berkeley, rofessor Bentley, W. Carruthers, Professor Daubeny, harles Darwin, Dr. Hogg, W. Masters, J. M'Nab, A. G. ore, Dr. Moore, T. Moore, J. Miers, W. Paul, Dr. Prior, G. Veitch, Dr. Welwitsch, Dr. Wight, James Yates, and hers. Several papers have already been announced, and is expected that a large number of foreign botanists and rticulturists will be present. Gentlemen intending to take rt in the Congress should apply to Dr. Maxwell Masters, e Honorary Secretary, at the office of the Exhibition, 1, 'illiam-street, Lowndes-square, S.W.

It is well known that Peligot proposed the employment of s observation on the insolubility of the compound of lime ith cane sugar for the production of this substance from olasses. In some experiments on a small scale he extracted venty-five per cent. of crystallizable sugar from beet-root olasses. In the sugar refinery of Schröter and Wellman, of erlin, this method of Peligot's is being carried out on a rge scale. The molasses is mixed with the requisite antity of hydrate of lime and alcohol in a large vat, and timately stirred for more than half-an-hour. The lime mpound of sugar which separates is then strained off, essed, and washed with spirit. All the alcohol used in the ocess is afterwards recovered by distillation. The mude precipitate thus produced is mixed with water, and composed with a current of carbonic acid, which is effected somewhat less than half-an-hour. The carbonate of lime removed by filtration, and the clear liquid, containing the gar, evaporated, decolorized with animal charcoal, and ystallized in the usual manner. The sugar furnished by is method has a very clear appearance, and is perfectly ystalline. It contains, according to polarization analysis, ty-six per cent. of sugar, twelve per cent. of water, the mainder being uncrystallizable organic matter and salts. e yield, of course, varies with the richness and degree of ncentration of the raw material; on an average 30 lbs. of gar were obtained from 100 lbs. of molasses.

The *Scientific Review* states that sulphuretted hydrogen gas, which for experimental purposes is usually obtained by means of sulphuret of iron, may be procured more conveniently, and in a state of greater purity, by the use of sulphuret of calcium. The latter is formed very easily by mixing uncalcined powdered gypsum with one-fourth of its weight of calcined gypsum, and powdered pit coal equal to one-third of the whole of the gypsum used, and working up the mixture to a stiff dough with water; next forming it into pieces four inches long, two wide, and one and a half thick, sprinkling them with powdered coal, and drying them, then placing them with coke in a wind furnace, and keeping them at a very high temperature for two hours. When cold, they will be found externally to consist of oxysulphuret of calcium, but internally of pure peach-coloured sulphuret of calcium, which may be broken in pieces about the size of nuts, and preserved in well-stoppered glass bottles. If water is added to these, and then sulphuric acid in small quantities at a time, sulphuretted hydrogen is given off with great uniformity.

The Paris correspondent of the *Chemical News* writes:— "By the use of endoscopes, laryngoscopes, and ophthalmoscopes, the medical man is enabled to get a sight of many things shut out from ordinary view. M. Houdin has added another to these ingenious instruments—the iridoscope—by the aid of which an individual is able to see all that is going on in his own eye. It is simply an opaque shell to cover the eye, pierced in the centre with a very small hole. On looking through steadfastly at the sky, or at any diffused light, the observer may watch the tears streaming over the globe, and note the dilatation and contraction of the iris, and even see the aqueous humour poured in when the eye is fatigued by a long observation. It is needless to say that with the aid of this instrument a man can easily find out for himself whether he has a cataract or not. If he has, he will only see a sort of veil covering the luminous disc, which is seen by a healthy eye. The instrument is certainly simple and curious, and will no doubt excite attention in those who are anxious to know more of themselves. An 'iridoscope' may be readily extemporised by making a hole in the bottom of a pill-box with a fine needle."

Mr. W. Crookes, F.R.S., has made the following communication to the *Times*:—"The Cattle Plague Commission have recommended carbolic acid as a disinfectant, and it is now extensively used as such. A spurious article composed of oil of tar, utterly valueless as a disinfectant, is now being imposed on the public. The iniquity of this fraud claims exposure, and I beg through your assistance to direct public attention to the fraud, as well as to the means by which it may be detected. Commercial carbolic acid is soluble in from 25 to 70 parts of water, or in twice its bulk of a solution of caustic soda, while oil of tar is nearly insoluble. To apply these tests:—1. Put a teaspoonful of the carbolic acid in a bottle; pour on it half a pint of warm water; shake the bottle at intervals for half an hour; when the amount of oily residue will show the impurity. 2. Dissolve one part of caustic soda in ten parts of warm water, and shake it up with five parts of the carbolic acid. As before, the residue will indicate the amount of impurity. These tests are not given as having any pretension to scientific accuracy, but as affording persons who are desirous of using carbolic acid a rough and ready means of seeing whether or not they possess the right article."

THE MONTH

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

MEETING OF THE EXECUTIVE COMMITTEE, APRIL 5, 1866.

Present, Mr. Henry Matthews, President, F.C.S., in the chair; Messrs. Wellspring, Freeman, Tidman, D'Aubney, Wade, Bicknell, Whincup, Anderson, Baumgarten, Potter, Buott, jun.; and Mr. Pass introduced.

The Registrar was also present, for the first time since his illness.

The minutes of the previous meeting were read and confirmed. Further progress being reported, and some routine business having been transacted, a list of applications for certificates of membership were read over, together with the registrar's report upon same; and on the motion of the chairman it was agreed that the same be issued.

Mr. Baumgarten proposed, and Mr. Buott, jun., seconded a motion that the vacancies in the executive committee, caused by the resignation of two of their number, should be filled up by the election of Messrs. Pass and Venman, who were willing to act if elected, which motion was duly carried.

The accounts of the society for the previous year, audited and found correct by the auditors of the society, were laid upon the table, and it was agreed that the same be published at the time when the remaining portion of the annual report would be sent out to the members, copies of the balance-sheet, in the meantime, to be furnished to the acting committee.

In connection with the accounts, it was reported that a further sum of £47 14s. 6d. had been invested to the credit of the Benevolent Fund, in addition to the sum of £107 5s. 6d. reported at the last committee meeting.

A discussion then arose as to the desirability of opening a current banking account for the use of the society, and resolutions to effect this were duly carried.

The President then stated that, in accordance with the resolution of the last meeting, he had written to the President of the Pharmaceutical Society to know whether the Council of that society were willing to co-operate with the Executive of the United Society to obtain a bill from Parliament, to which he had received the following reply:—

47, Piccadilly, March 17th, 1866.

Sir,—In reply to your note of the 16th inst., asking my opinion as to the willingness of the Pharmaceutical Society to co-operate with the United Society of Chemists and Druggists "in urging and assisting the Government to introduce a Chemists' and Druggists' Bill into Parliament, based upon the recommendation of the Select Committee" of last year, I beg to say that it is the unanimous opinion of the Council of the Pharmaceutical Society that urging the Government at this time would be useless, unwise, unpolitic.

The great press of matter before Parliament just now, connected with Reform, Rinderpest, and Fenianism, renders it almost certain that the ministry will not adopt the recommendation of the Select Committee to introduce a bill on the subjects in which we are interested during the present session. Should this expectation of delay, however, be incorrect (and for myself I should rejoice to find it so) our council will always be ready to assist the Government in arranging an efficient and yet liberal measure for the settlement of the question. I say "an efficient measure," and I think you will agree with me that a mere "Poison Bill," fettering us with registration of sales and attendance of witnesses, prescribing a particular form of bottle in which poisons might be kept and sold, and a particular corner of our shops in which they should be placed, would be only an encumbrance to the statute-book, inoperative as regards the public, and especially objectionable to men who, if they be qualified to deal in dangerous articles, will each according to the special circumstances of his case adopt precautions far more conducive to the public safety.

I have said also a "liberal measure;" and on this point I may add that the Home Secretary is already in possession of the views entertained by the Phamaceutical Society, and I believe no Chemist and Druggist, properly so called, could, whether he be now a member of our society or not, fairly object to those views. Our desire is to make the compulsory parts of the bill "entirely prospective," and to give all persons registered under it equally easy means of access to the society which should regulate the examinations, etc. To suppose that there will ever be two societies for the same object, established by law, requires a stretch of imagination to which I am not equal, and is a thing, I believe, entirely beyond the hope, nay, even the desire, of the best members of your society.

I fully recognise the right of all persons governed (but mind, I think "governed" a strong expression for the present case) to have a voice in the governing body, and I would for this reason carry the provisions of the bill a little further than I have yet stated.

You know the Select Committee resolved that there should be no compulsory registration for men already in business. I would nevertheless make provision for a "voluntary" registration, and all Chemists able to bring the required certificate of their having been Chemists—properly so called—should be entitled to that registration, and so have the same easy access I have mentioned before to the society.

These men would be in no way interfered with by the proposed legislation, but being engaged in the same trade I know many of them would like such a provision, and beyond that I regard the union of all men of one calling as an important means for elevating the standing of the whole body.

I have written rather fully on this matter, because I am anxious to assure you that there is really no foundation for the oft repeated charge made against the Society, over which I have the honour to preside, of a desire to subjugate all Chemists and Druggists throughout the country to their authority, and I trust you will agree with me in thinking that the measure we desire to propose is one which would be beneficial, and ought to be supported by the whole trade.

I have the honour to be, Sir,
Your obedient servant,
George W. Sandford.

Henry Matthews, Esq.,
President of the United Society of Chemists and Druggists.

On the letter being read, Mr. Wade remarked that h thought it was very satisfactory, and gave a proof of wha could be accomplished by conciliatory measures.

Mr. Baumgarten could not agree with this view, nor coul he see what had been accomplished beyond a mere civil communication between the two presidents—an exchange o merely personal views, which ended in nothing, and wa more calculated to prevent progress than otherwise.

Mr. Wade referred Mr. Baumgarten to that part of th letter wherein Mr. Sandford had stated that he was expressin the unanimous opinion of the council of the Pharmaceutica Society, that nothing could be done with Government thi session. This communication had therefore afforded the information to the executive of the United Society that th council of the Pharmaceutical Society was taking no actio at present.

Mr. Anderson said that Mr. Wade had more faith in th Pharmaceutical Society's communications than he had. W it likely that the Pharmaceutical Council would publish the United Society the exact method or time of carrying o their proceedings. He granted that the letter was ci enough, but it said nothing about what they wanted to hear- namely, co-operation. He felt this so decidedly, that should move a resolution to this effect.

Mr. Buott, jun., said that a question had been asked as whether the Pharmaceutical Society would co-operate wi the United Society? Let them refer to the letter receive and they would find no answer to this definite questi They found instead an expression of an opinion from t Pharmaceutical Council, that the pressure of Parliamenta business would prevent Government acting this session, b that if their expectation of delay was incorrect, the coun of the Pharmaceutical Society would always be ready assist: The United Society? No; but the Government— bring forward a liberal and efficient measure, that is accord to the Pharmaceutical Society's views; and the letter w on to say that the Home Secretary was already in possess of these views. The remaining portions of the letter w merely sentiments expressed to disguise the facts that council of the Pharmaceutical Society were determined to act in union with the United Society, and that they w equally determined to carry a bill they called a "lib measure," which would reserve special privileges for mem of the Pharmaceutical Society—a matter that they see more desirous to carry out than to obtain any legisla enactment conducive to the interests of the trade or public. While admitting the courteous tone of Mr. S ford's letter, he did not think that any good could result these personal communications. They were calculate create a very erroneous estimate of the real strength organization of the United Society, and he did not think the district committees would approve of these useless changes of civilities while the society had some stern d to accomplish. Danger was in front of them. It had recently reported that the Medical Council had waited the Home Secretary, and had induced him to instru Parliamentary barrister to draft a bill for medical re including regulations for the better dispensing of medi

What that meant, from the Medical Council point of view, the trade well knew.

A further discussion of the question resulted in the following resolution being moved by Mr. Anderson, and seconded by Mr. Buott, jun.:—"That this meeting, while acknowledging the courtesy with which the president of the Pharmaceutical Society has answered the letter addressed to him, regrets that he does not give any definite reply to the question, 'Whether the Pharmaceutical Society would be willing to co-operate with the United Society in urging Government to pass a bill for the incorporation of the trade, based upon the recommendations of the Parliamentary Select Committee?'" which resolution, on being put, was duly carried.

Further consultation took place, during which the registrar made a suggestion for future proceedings, and a vote of thanks to the chairman closed the meeting.

For the Registrar and Secretary,
C. F. BUOTT.

ACCIDENTAL POISONING.—CHARGE OF MANSLAUGHTER AGAINST MR. NOAKES, OF BRIGHTON.

THIS case was tried at Lewes on the 21st ult., before Lord Chief Justice Erle, who had thus commented upon it in his charge to the grand jury:—

"There is a charge of manslaughter against a chemist, who appears to have sent aconite to the deceased at a time when the deceased expected henbane to be sent to him. In respect to that bill I commend it to your careful notice, because, as I read the depositions, I think that the charge is not made out against the accused. You are well aware that the essence of the charge of manslaughter is, that death should have been caused by the unlawful act of the accused; and I think it is doubtful to my mind whether there is evidence on which I could act if I was on a jury,—that is, whether death was caused by the act of the accused. There is, to my mind, so much doubt, that if I was on the jury I could not say the act of the accused was an unlawful act. The accused appears to be a chemist very much relied upon by deceased, Mr. Boys. He had been in the habit of having medicine from him; he was eighty years old, and had a complaint,—a dangerous complaint, bringing him approximately to the brink of death at all times,—that was a complaint of the heart. He had been in the habit of receiving from the defendant a medicine called henbane, and a medicine called aconite for the disease he had: and he had a peculiarity of being determined to have his medicine supplied to him in his own bottles, which he chose to send. The bottle which was used for aconite had been an *eau de Cologne* bottle, and was marked 'Poison—Aconite' outside; and the bottle he chose to send for henbane was a common bottle, marked on the outside 'Poison'—poison only. His disease of the heart was bringing him so approximately to death, that his wife states that they made it a point on no occasion to interfere with the will of deceased. He was a man of great intelligence and very firm decision, and having a diseased heart, whatever he chose to think was done without resistance. A few days before his death he sent the bottle intended for henbane with a bottle intended for some liniment. He sent both bottles wrapped up, and with a verbal message to the chemist, 'please to fill them and to return them to Mr. Boys.' There was no prescription, no written instructions; and the accused was in he habit of sending both henbane and aconite to him. Upon his occasion he put aconite into the bottle intended for henbane. Deceased shortly afterwards took thirty drops of conite, and perhaps,—perhaps that quantity of aconite did ring on some accelerated action of the heart and so caused eath. But I should be of opinion that if Mr. Boys had lived nd brought an action against Mr. Noakes for damage done to im by his sending aconite instead of henbane, that under hese circumstances Mr. Boys was really as responsible as Mr. Noakes for that which had happened. He chose to have ottles of his own, he chose to send them without written structions, he chose to be on these terms that nobody could ay a word to him; he had been in the habit of having both enbane and aconite from Mr. Noakes, and one bottle was lled with aconite instead of henbane, and of this he took a se rather larger than was conducive to health. The evience of the medical men as to the cause of the death of Mr. oys shows clearly that death arose from disease of the heart, from which he had been long suffering; and at the *post mortem* examination it was found that the state of the heart was clearly such as would lead to death. The diseased heart had caused death. But other medical opinions have come in, and the supposition is that the taking of the aconite, did accelerate the action of the heart, and any acceleration of the heart might hasten death. Probably you are aware that a man is responsible if he hastens the moment of death by the smallest degree; but the utmost that is said by the second medical man is that he inclines to the opinion that perhaps death was accelerated by taking aconite instead of henbane. The accused appears to have been a chemist of the highest respectability and the greatest caution, and the widow of the deceased states that it is not at all by her desire that any proceedings should be taken. Probably it would be a matter of great importance to the accused if you did carefully examine whether that bill ought to be thrown out. It rests entirely with you. It is of great importance that chemists dealing with such powerful instruments as drugs should exercise due care and caution; but cases are to be judged by circumstances, and therefore I say the circumstances of this case are worthy of your attention on the grounds I have mentioned."

Notwithstanding the manner in which the learned judge had placed the case before them, the Grand Jury, to the great astonishment of everybody in court, brought in a true bill against Richard Noakes for feloniously and wilfully causing to be taken, by Samuel Boys, a certain deadly poison called aconite, and thereby slaying the said Samuel Boys, on the 21st of August, 1865.

Mr. Besley conducted the case for the prosecution; Mr. Roupell and Mr. Merrifield appeared for the defence.

The prosecution, it was stated, had not been instituted by the relatives of the deceased, but by the public authorities, who considered that a trial ought to take place. Mr. Boys, the deceased, was an old gentleman of the age of 80, who resided at Lansdown-terrace, Brighton, and suffered from disease of the heart. He had been attended by a Dr. Hill, who had prescribed for him 30 drops of henbane, to be taken occasionally, with a view to his relief. The deceased kept the drugs he used in a medicine chest in his own bottles, and among those he took were henbane and aconite. The prisoner (who is about 60 years of age) was stated by the counsel for the prosecution to be a most respectable chemist, and he from time to time supplied Mr. Boys with drugs and medicines, and, among other things, for years with aconite, and on one or two occasions with henbane. The last day he supplied any drugs was on the 16th of August, when two bottles were taken by Mrs. Boys to his shop "to be filled," one of them being labelled "henbane, 30 drops," and the other was labelled with the name of a medical oil which was required as a liniment, "for outward application only," and the bottle had those words also on it, but in smaller letters. It was admitted that on this occasion the prisoner himself had filled the bottles, which were sent to the house of the deceased, and given to his servant; and there was no doubt that they found their way to the medicine chest of Mr. Boys. On the night of Sunday, the 20th of August, he felt an attack of his disorder, and said he would take a dose of the henbane, which he then accordingly did take, measuring it out himself in a "drop-glass," as it is called, which measures the number of drops. The dose, it will be borne in mind, was 30 drops (which was written on the outside of the bottle), and there was no reason to believe that it had been exceeded. Upon swallowing it, however, he observed that it "felt hot," which it appears is a symptom of aconite. About a quarter of an hour afterwards he said his limbs had become benumbed—which also, it is stated, is a symptom of aconite. After this he felt sickness, which, again, is a symptom of that deadly poison. He became alarmed, and looked at the bottle, having a suspicion that there was some mistake; but on looking at it and seeing it marked "henbane," he said, "It's all right." He was extremely ill all night, and early in the morning desired that the bottle should be sent to Mr. Noakes to see if it was right, retaining, however, a portion of it in the house. Not long afterwards he became drowsy, and in the course of the hour he died. The attention of the medical men was directed to the contents of the bottle in question, and they were satisfied from its pungent taste that it was aconite. A *post mortem* examination, however, disclosed the seat of the cause of death was the heart, and it appeared that aconite acts on the heart, and is especially dangerous when the heart is diseased.

The case for the prosecution was, that aconite was contained in the bottle; and there is no doubt that it is a deadly poison, so that thirty drops would be certain to cause death. The liquid in the bottle had been analysed, and found to be tincture of aconite, of which ten drops would be sufficient to cause death. The case for the prosecution was that Mr. Noakes had been guilty of criminal negligence in putting aconite into the bottle instead of henbane. It was suggested that the mistake had arisen in this way: Two bottles had been sent by the deceased to be re-filled, one with a liniment, the other with henbane. Now, on former occasions aconite had been sent for as a liniment; and it was suggested that on this occasion, supposing that the liniment wanted was aconite, he had sent aconite, and had, moreover, put it into the bottle which ought to have contained the henbane, putting the henbane into the bottle which was meant for the liniment, and which was marked "for outward application only," in consequence of which the deceased took the aconite instead of the henbane, taking it out of the bottle which ought to have contained it, and which was marked with a label—"Tincture of henbane, thirty drops at a time." The two mixtures appeared to be somewhat of the same general kind of colour, especially at candle-light, and so they could only be distinguishable to the eye by the labels upon the bottles, although there are differences in colour, taste, and smell. On the other hand, the two bottles were of very different size and shape, the smaller one, which ought to have contained the aconite, being only about a quarter of the size of the other. This was the main circumstance relied upon by the prosecution as proof of culpable carelessness; but, on the other hand, it was stated by the assistant that the bottle marked for henbane was not one which had been originally sent out from the defendant's shop, or would have been sent for such a purpose; and although it might have been backwards and forwards to the shop for henbane, it might or might not have been seen by the defendant before. It bore upon it, however, it will be observed, a label distinctly indicating that it was intended to contain "tincture of henbane." It came out that deceased was also in the habit of sending for aconite, but in a smaller bottle, marked "Poison—for outward application only;" and this, again, was quite a different form of bottle from that sent for the liniment on this occasion, being a round bottle, whereas the bottle sent for liniment on the present occasion was square. The main ground of defence suggested on cross-examination was that the unfortunate deceased had sent bottles different in form and shape from those which the prisoner himself was accustomed to use for the respective drugs supplied (both being white), and that this had misled him. It was stated that he was very careful in using a totally different sort of bottle for outward applications—a bottle made of glass, blue in colour, and fluted in structure, so as to be easily distinguishable either by the eye or the touch in any light, or in the dark in case it was used at night. Now it was urged that, but for the strict orders of the deceased to send the tinctures in his own bottles, this blue, fluted bottle would have been used on this occasion to contain the aconite, and would thus have been easily distinguishable in any light. The last time aconite was supplied to the deceased by the prisoner was in April; the particular occasion now in question was in August; and a bottle was produced in which it was probably supplied, bearing the prisoner's name, and labelled "Aconite, for outward application;" and this was, on the one hand, of white and smooth glass, and so quite different from the bottles used by the prisoner for such mixtures; and, on the other hand, being round instead of flat in form, and being much smaller than the large flat bottle sent for the liniment, was quite different, and easily distinguishable therefrom. And upon this fact, as already mentioned, the case for the prosecution mainly rested.

Dr. Phillips, the medical man who was called in and made the *post mortem* examination, stated that aconite paralysed the heart; that thirty drops would fatally paralyse it, and cause death; and that the death here was owing to paralysis of the heart, or stoppage of its action. It was stated that the prisoner, when he was applied to and shown the bottles, appeared to perceive that he had made an unfortunate mistake, took all the blame upon himself, and showed great distress of mind—indeed, he very nearly fainted. It was stated that for thirty years he had dispensed medicines, and that no complaint or accident had been heard of before; and his general repute was that of a most able and careful practitioner. It was elicited from the medical witness that, if he had not heard anything about aconite, the state of the heart itself was quite sufficient to account for death, its disease being such that death might occur at any moment; and the examination having been directed chiefly to the heart alone as the seat of the actual cause of death, actual traces of the presence of aconite in the system (which, it appears, it is difficult to discover) were not detected; and the defence was partly grounded upon the doubt as to the actual cause of death being the aconite or the disease; and the medical witness being pressed as to whether he could positively say that the aconite had anything to do with the death, he stated that he could not positively say that it had, though the appearances of the heart were such as would result from aconite. It was also endeavoured to make out that aconite is sometimes given internally in cases of disease of the heart, and though the medical witness for the prosecution himself deemed it dangerous, he admitted that other medical men thought otherwise, and also that there was great variation as to the strength of the doses given. As a matter of fact, the medical witness stated that chemists did not go by the "British Pharmacopœia," although they ought, he said, to do so. However, the medical witness, in conclusion, stated positively that a man labouring under disease of the heart could not take thirty drops of aconite with impunity. Dr. Schweitzer, an analytical chemist, also proved that the bottle sent to the prisoner marked "henbane" contained "strong tincture of aconite," and stated that from three to fifteen drops of it would be a proper dose, and fifteen drops a strong dose, even supposing it a fit medicine at all in a case of disease of the heart. He, however, said that he was a "chemist," and not a medical man. Dr. Harris, the medica man who had long attended the deceased, stated it as hi opinion that the aconite was not the cause of death. Thi was the case for the prosecution.

The Lord Chief Justice thereupon put it to the jur whether they deemed it a case in which they could call upo the prisoner for his defence, or whether they would no rather say that it was a case in which they were not sufficiently strong or clear to warrant them in finding a part guilty of felony. They could not commit in such a cas unless clearly and firmly satisfied that there had been a cu pable degree of negligence, and that it had caused deat Now, as to the first point, there was no judge who would further than he would in demanding from a chemist a gre degree of care in sending out the powerful and dangero drugs in which he dealt. But this was the case of a chemi put out of his ordinary course, and not allowed by his cu tomer to use his own ordinary precautions, but desired send the medicines in bottles which the customers chose send for them. Moreover, it was the case of a chemist wh customer had dealt with him for several years in aconite, a had only sent once or twice for henbane. No doubt t bottle in which the aconite was sent had upon it a la bearing on it the word "henbane," and then, in smal letters, "thirty drops;" and it might be said that the priso ought to have read those words. But without saying t there might not have been evidence in a civil action, he sho certainly pause before he concurred in a conviction for fel on that ground. Then, as to the second point—the caus death—the jury must be satisfied, before they convicted, t the death was caused by the alleged negligence. But on the medical witnesses for the prosecution stated that he c not say that the aconite had anything to do with the de though it might have accelerated it; the other stated th had not. Under these circumstances, could the jury sa convict of felony?

The jury, after a few moments' consultation, return verdict of "Not Guilty," which was received with applause.

PARLIAMENTARY INTELLIGENCE.

VACCINATION BILL.

In the House of Commons on the 11th instant,

Mr. H. **Bruce** described the scope of this Bill. sketching briefly the history of vaccination, and the le tion in regard to it, and quoting copiously from numerous medical returns and reports to illustrate its efficacy in checking the spread and virulence of smallpox, he called attention to the grave defects of the present system, which the Bill was intended to remedy. The Bill in the first place was a consolidation of the Acts which related to vaccination. It consolidated either wholly or in part provisions which were now dispersed over six different Acts of Parliament. Its principal object was to give the Poor Law Board, with their concurrence, power to re-arrange the districts as often as they should think proper, and also to revise the contracts. Another object was to secure a more complete registration. That was only a means to an end, but it was a great one, and important results might follow the adoption of a complete system. It was proposed to increase the pay of registrars from 3d. to 4d., 1d. to be paid on entry, and 3d., as now, on the completion of the vaccination. Now, the certificate of vaccination was sent to the registrar, not of the district in which the birth took place, but of that in which the vaccination took place, so that there were no means to show that a child whose birth had been registered had also been vaccinated. The Bill provided that the certificate of vaccination should be sent to the registrar of the birth. Hitherto the medical practitioner had been bound to send a certificate without payment; the Bill proposed to cast the duty of transmitting it upon the parent or guardian. It did not propose to alter much the position of public vaccinators; their rate of payment would remain as before; but they would be obliged to act for fixed districts, instead of having a sort of roving commission over a whole union; and they would be paid for duty performed at workhouses. A good deal of dissatisfaction had been expressed with the rate of payment; but after due consideration, it was not thought necessary to increase the burden imposed upon the ratepayers. Increased facilities were to be given to guardians to enforce the law. At present, before a person could be convicted of disobeying the Act it was necessary to prove service of notice; that necessity it was proposed to abolish. When a penalty had been once imposed the guardians hitherto could not prosecute for continued neglect; it was proposed to give them power to take further proceedings. In principle the Bill would make every man responsible for the non-vaccination of his child; and as every child born since 1853 and not vaccinated remained unvaccinated in defiance of the law, there would be no hardship in enforcing the law against all parents who had disregarded it. The proposed amendments of the law would, he believed, conduce to greater efficiency in vaccination, both as to quantity and quality, without imposing any great hardships upon either ratepayers or guardians.

Mr. HENLEY, in criticising the Bill, pointed out two principal defects—the want of security for a due supply of healthy lymph, and the inadequate payment of the medical officers, to which last cause he attributed the comparative failure of the system of compulsory vaccination.

Sir R. PEEL agreed with Mr. HENLEY in censuring the niggardly payment allowed to the vaccinators, and enumerated nine or ten clauses in the Bill which he predicted would be inoperative. He suggested that it should be postponed to give time for further consideration.

Mr. LEWIS moved that the Bill be referred to a Select Committee, and this amendment was seconded by Sir J. C. JERVOISE, and supported by Lord HENLEY, Mr. BARROW, and other members.

After some further discussion Mr. BRUCE, having replied to arious objections, accepted the amendment, and the Bill was rdered to be referred to a Select Committee.

LAW AND POLICE.

PHARAOH'S SERPENT AGAIN.—RE TOLHAUSEN'S PATENT.

N the 24th ult. the Lord Chancellor considered the appliation made by Frederick Tolhausen to have the Great Seal ffixed to letters patent for an invention claimed by him r the well-known firework called "Pharaoh's serpents." appeared that the petition for the patent was presented on e 7th of September last, and the sealing of it was opposed r Mr. Nottage, on behalf of the London Stereoscopic ompany, on the ground that the alleged invention was not w, being a well-known chemical production, and also that the articles had been publicly sold by other persons before the application for the patent. These allegations were denied on behalf of the petitioner.

The Lord Chancellor said he regretted affixing the Great Seal to such a patent. As, however, it had not been clearly proved that the invention claimed had been publicly exhibited before the presentation of the petition, the usual rule of affixing the Great Seal must be followed. The validity of the patent might be afterwards disputed.

POISONING BY WHITE PRECIPITATE.

In the Crown Court at Manchester on the 15th ult., Ruth Hargreaves, a girl aged 18, was charged before Mr. Justice Lush with having at Newchurch, on the 9th of December last, and on divers other days, feloniously administered or caused to be taken by Henry Hargreaves, her father, a certain poison called "white precipitate," with intent to kill and murder him.

It appeared that the prisoner, who is a mill-girl, had formed the acquaintance of one Henry Heap, with whom she kept company, and whom she was in the habit of meeting when out. This acquaintance her father and mother endeavoured to stop. The girl's father being ill was attended by a medical man, who sent him a bottle of medicine, and the father of the girl on taking a dose of this experienced a burning sensation in the throat and stomach, and became very ill. He was also fond of buttermilk, and on partaking of some which was in a jug in the house, the same symptoms were again produced. In consequence, he had the medicine and buttermilk sent to his doctor, who found in each traces of white precipitate, and on the buttermilk being sent to Mr. Calvert, the analytical chemist, he found 10 grains of white precipitate in it. This was described by the doctor as a virulent poison, and by Mr. Calvert as a noxious drug, not certain as a poison, but calculated to produce chronic inflammation of the bowels if taken in small doses. If taken in large doses it would produce vomiting and be rejected. It appeared that the prisoner had sent a little girl to a druggist's for "white precipitate" to cure ringworm. On being taken into custody she stated that she had put it into her father's medicine and milk to make him worse in his illness, so that she might be able to get out more to meet her sweetheart. In her defence she said she had done it at the instigation of Henry Heap, and that she never intended to kill her father, but only to make him ill.

His Lordship directed the jury that the evidence rather pointed to the misdemeanour of administering a noxious drug with intent to injure than to the felony; and

The jury found the prisoner Guilty of the latter offence.

His Lordship sentenced her to twelve months imprisonment with hard labour.

THE VITRIOL-THROWING CASE.

At the Central Criminal Court, on Thursday last, John Wainwright, 50, surgeon dentist, was indicted before Mr. Justice Lush for having feloniously thrown at and upon Sarah Ann Peacock a quantity of corrosive fluid, to wit, sulphuric acid, with intent to burn and disfigure her, and also with intent to do her some grievious bodily harm. There were two other counts in the indictment, charging the lesser crime.

Mr. F. H. Lewis and Mr. Montague Williams appeared for the prosecution; the prisoner was defended by Mr. Sleigh and Mr. Besley.

The circumstances of this case revealed one of the most cruel and abominable offences which has been tried during the present sessions. The prisoner, who was now dressed in a large cloak, and presented a somewhat clerical appearance, was charged with having thrown a basin of sulphuric acid into the eyes of a young married woman named Peacock, whereby she had lost the sight of one of them, and was otherwise maimed and disfigured, most probably for the remainder of her life. It appeared that she was the wife of a jeweller named Stephen Peacock, residing at 477, New Oxford street. On the 18th of December last, about 11 o'clock at night, her husband found a written paper affixed to his doorpost, which, in very foul and filthy terms, accused his wife of being on intimate terms with soldiers and others. On comparing the handwriting of this paper with that on the labels on the prisoner's medicine bottles, he and his wife arrived at the conclusion that the prisoner was the writer of the offensive paper. Both of them charged him with the offence. He denied its truth, and went down upon his knees and protested his innocence. He was asked by them to write out a fresh copy of the paper, and he did so, and then again, by comparing the handwriting of the two copies, they were more than ever confirmed in the belief that he was the delinquent. On the following Saturday night, when Mrs. Peacock was returning home, and had reached within 200 yards of her own house she met the prisoner. He was dressed in a cloak. He had a cap on his head, which was partly drawn down over his face, so as to hide his beard, and before she had time to speak to him he threw a basin of sulphuric acid into her eyes. Instantly her eyelids became contracted, and she suffered the most excruciating torture. At the Charing-cross Hospital it was at once deemed advisable to remove one of her eyes. Of course, the sight of that was for ever gone. The other eye had been seriously injured, and, in case of erysipelas or inflammation setting in the probability was that she would lose the sight of that eye also, and thus become totally blind. After the occurrence the prisoner entered a baker's shop in the neighbourhood, and there said that the fluid thrown at her was not vitriol, but that it consisted of alum water. The following day he was apprehended, and then, in reply to the charge, he denied that he was guilty of it. With the view of showing that this denial was false it was proved that the cloak worn by him at the time the fluid was thrown was marked with spots of sulphuric acid, which spots it had been attempted afterwards to take out by the application to them of some alkaline substance. One remarkable circumstance in the case was that some evidence was given to show that this was not the only injury to person which the prisoner had inflicted, for upon the 18th of November, when a lithographer named Dakin was standing at night at the corner of Museum-street, talking to the prosecutrix, and when she had just parted from him, a quantity of sulphuric acid was thrown into his eyes, which rendered him stoneblind for life. It was admitted by the prosecution that Mrs. Peacock had not said in the first instance that the prisoner was the person who had thrown the fluid at her, and that her description of the offender then did not in any respect correspond with that of the prisoner, but afterwards she swore that the prisoner was the man. His motive for committing the crime was said to be revenge caused by his having been forbidden by the prosecutor to enter his house.

At the close of the case for the prosecution,

Mr. Sleigh addressed the jury on the part of the prisoner. He contended that the evidence had failed to prove the identification of the prisoner as the person who committed the act; added to which, they had the first statement of Mrs. Peacock that it was a man of a totally different description to that of the prisoner who perpetrated the act. He could not but suggest that it was only after she had heard that her husband had given the prisoner into custody that she had altered her first statement. The learned counsel, having dealt with the other points of the case, concluded by pressing on the jury that where there was a doubt it was their duty to acquit. In support of his argument that the witnesses were mistaken on the subject,

A woman was called for the defence, who stated that she visited the prisoner respecting a dental operation on the 6th of January, the night in question, and saw him at the very time he was said to have thrown the sulphuric acid into the eyes of the prosecutrix.

Mr. Sleigh and Mr. Lewis replied, the latter reminding the jury that the identification of the prisoner did not rest upon the unsupported evidence of Mrs. Peacock, for there was the further fact of his having been seen in the baker's shop, and besides that there were the acid marks upon his cloak.

Mr. Justice Lush summed up, and the jury, after an absence from court for a quarter of an hour, returned a verdict of Guilty.

Upon being asked why sentence should not be passed upon him, the prisoner, in a low tone of voice, said, "I can only repeat now what I stated before, that I am not guilty."

Mr. Justice Lush, in passing sentence, said the jury had convicted him, and very properly, of one of the most atrocious crimes known in the criminal annals of this country. If his motive for committing it was jealousy, as it probably was
that motive was unjustifiable. The offence had alway
been considered most barbarous and inhuman. So great wa
the abhorrence of the law respecting it, that it was enacte
by the statute that if any person should be guilty of it
whether with or without the intent of doing grievous bodil
harm, he was liable to be kept in penal servitude for lif
The crime was a cruel one in the extreme, because it wa
one from which persons could not protect themselves, and i
was the more cruel in this case because no provocation ha
been given which could have aroused the prisoner's passion
or provoked his feelings of resentment. Nothing but a seve
sentence would meet the justice due to such a crime, an
that sentence was that he be kept in penal servitude fc
twenty years.

POISONING BY ARSENIC AND STRYCHNINE.

At Exeter, on the 15th ult., Mary Ann Ashford w
indicted before Mr. Justice Byles for the wilful murd
of William Ashford at Honiton Clist on the 4th of Novembe

Mr. Kingdon and Mr. Slade were counsel for the prosec
tion; Mr. Coleridge, Q.C., and Mr. Cox defended t
prisoner.

It appeared that the deceased, who was the husband
the prisoner, was a shoemaker, carrying on a good business
Honiton Clist, a village about four miles from Exeter. I
was a very industrious, thriving man, and had saved abo
£250. The husband and wife were about the same age
between forty and fifty, and had been married about twer
years, and had lived a happy married life until the last t
years. The first part of the case was that on Sund
the 29th of October, the prisoner complained to a neighbo
that her husband was ill—that he was suffering from diarrh
and sickness. On Monday nothing particular occurred, l
on Tuesday, the 31st of October, the prisoner went to Exe
and saw a medical man, Dr. Roberts, to whom she describ
her husband's state. On Wednesday morning, the 1st
November, Dr. Roberts received a message from the prisor
requesting him to come and see her husband. Dr. Robe
accordingly went to the house and saw deceased. He fou
him much prostrated, and very weak and ill—constantly s
and complaining of great pain and thirst. He chan
the medicine he had before sent him. Dr. Roberts cal
again the next day—the 2nd of November—and fou
the symptoms still continuing. He again changed
medicine. On Friday he saw him again, and he t
requested Dr. Miles to come and see the deceased man.
Friday night the deceased was attacked with fits and suff
great pain, the back being bent back, and the limbs dr
up. On Saturday morning the poor man died.

The next question was the cause of the death. An ap
cation was made to the coroner, and there was a *post mo*
examination. Two medical men who examined the l
could not discover any natural causes to account for
death. Grave suspicions were entertained, and the stom
liver, and various parts of the vomit were placed in
sealed up, and taken to Mr. Herapath, at Bristol,
discovered arsenic and strychnine in them. The symp
were consistent with death occasioned by these poisons.

The question then arose, by whom were these po
administered? The prisoner had been the only perso
attendance on the deceased. On Wednesday, the 25
October, the prisoner had sent a little girl to a chemi
some jalap. On Sunday, the 29th of October, she compl
of her husband's illness. No one then saw deceased
Tuesday evening, October 31, when Mrs. Butt, a neigh
went in to see him, and the prisoner asked her to stay a
On Thursday evening, November 2, a Mrs. Brewer was
in by the prisoner, and she continued there all night.
prisoner mixed up some medicine in the kitchen, and t
upstairs to him. On Friday evening, November 3
deceased was desirous of having some tea. The pr
went downstairs to get some, and she brought up a
and teacup which had some milk in it. There was a
at the door, and the prisoner went downstairs. Mrs.
who was in the bedroom, went to pour out some te
upon lifting the spoon, she found a bluish white p
attached to it. She gave the deceased the tea, but
offensive to him, and he would only take the smallest
tity of it. That powder must have been put into the c

the prisoner while downstairs. On the Saturday, November 4, Mrs. Butt went into the bedroom, and upon the washstand she saw a wine-glass, and there was a white-blue powder settled at the bottom of the glass. Mrs. Butt took the powder, and put it in a paper, and that was sent to Mr. Herapath, who discovered it to be arsenic. After the man was dead, suspicion became very rife, and the prisoner was taken into custody. She was about to be searched, when she took out of her pocket a prayer-book, a purse, a pocket-handkerchief, and a small packet, which she instantly threw into the fire. She spilt some part of the powder contained in the packet on her clothes, which she wiped off with her pocket-handkerchief; that was found to be arsenic. Under the clasp of the purse there was a white powder, and that was found to be strychnine mixed in starch. On the 10th of November, when Mrs. Brewer was cleaning the house, she ound in the bedroom a packet screwed up, and that packet 'as labelled "poison." Poison, therefore, was found in the ody; poison was found in the teacup and in the wine-glass. No one could have administered the poison but the prisoner. It was shown that the prisoner had thrown the packet which 'as in her pocket into the fire, and that this packet contained oison. Then came the question of motive. It appeared hat the man and wife had lived happily together for nearly wenty years, but that there had been an estrangement for he last two years. It has been stated that the deceased was shoemaker. He had in his employment an apprentice and journeyman named William Pratt, and there was no doubt at an illicit intercourse had been carried on between the risoner and Pratt. This had excited the notice of the husand, and he had discharged Pratt, who then went to live at awlish; and a long correspondence had taken place between ratt and the prisoner, showing the nature of the connexion hich had existed between them. The deceased had some ne since made a will, in which he had given most of his operty away from his wife. She was very angry at this; d in June last he executed another will, by which he left l his property to the prisoner. It would seem that after att left the deceased he became cold to the prisoner, and e was desirous of regaining his attentions to her.

The prisoner was found *Guilty*, and sentenced to death.

ATTEMPTED SUICIDE BY LAUDANUM.

At the Worship-street Police-court on the 13th ult., ouisa Fletcher, aged 17, describing herself as a tailoress, as charged with attempting to poison herself. She lived th her parents in Patriot-row, Cambridge-heath, and on turday evening knocked at the door of Mrs. Maria Downg, a lodger, who upon opening it found her crying. She ked her what was the matter with her, and the prisoner d she could not tell. The prisoner appeared to be stupefied d she led her into her room, placed her in a chair, and en saw a bottle in her hand labelled "poison," which she atched from her. The bottle was quite empty, and as the soner acknowledged she had swallowed its contents, ich were laudanum, Mr. Downing, who then came home, xed a strong mustard emetic and forced it down the soner's throat while his wife held her hands. Mr. Lane, urgeon, gave her another antidote, and on her recovering e was given into the custody of French, 443 K, to whom e said she knew she had taken poison enough to destroy , and that she was sorry it had not done so, but she obsticly refused to give any reason for her conduct.

GOSSIP.

We have to record the decease of Mr. William Southall, of mingham. He was one of the founders of the Pharmaceul Society, and for some years a member of the Council.

At the close of last month, Dr. Lankester held an inquest the body of a man whose death was caused by excessive nking of a mixture of spirits of wine five-and-a-half per t. over proof, and of wood naptha, which, as a medical istant, he was in the habit of purchasing at the cheap rate hree halfpence for three quarterns; in addition to which, took large quantities of opium. A verdict was returned ccordance with the medical evidence, of pulmonary apoky and effusion of serum on the brain.

The firm of Caley and Knights, chemists and druggists, wich, has been dissolved.

All claims on the estate of the late Mr. Edwin Ballard, chemist and druggist, Faringdon, Berks, must be sent on or before the 30th day of April, to Mr. George Frederick Crowdy, solicitor, Faringdon.

Mr. Christopher Troughton will receive and discharge all claims in connection with the lato firm of C. Troughton and Co., chemists and druggists, Liverpool.

Mr. Charles Hockin has retired from the firm of Hockin, Welson, and Hockin, chemists and druggists, 38, Duke Street, Manchester Square, London. The business will henceforth be carried on by Mr. Samuel King Welson, and Mr. John Brent Hockin, under the style of Hockin, Welson, and Co.

Henry Hall, chemist and druggist, Headingley, Leeds, has covenanted to pay a composition of 15s. in the pound by three equal instalments, at three, six, and nine months, the two last instalments being secured by bills of exchange by Henry Hall and Messrs, William and Matthew Hall.

Mr. David Vaughan has purchased the good will of the business hitherto conducted by the representatives of the late Mr. R. Evans, at the general drug and dispensing establishment, The Cross, Oswestry.

Mr. J. E. W. Fallofield will discharge all claims against the late firm of Thompson and Fallofield, chemists and druggists, Thame, Oxfordshire.

Mr. Edward Mackmurdo has retired from the firm of Davy, Mackmurdo and Co., manufacturing and wholesale chemists and druggists, 100, Upper Thames Street, London. The firm now consists of Messrs. Davy, Routledge, and Yates.

Richard Thomas, chemist and druggist, Crosswall, Dover, has made an assignment of his estate. Trustee, Mr. W. H. Gann, Dover.

The firm of Duncan, Campbell and Co., manufacturing chemists, Albion Works, Old Ford Road, Middlesex, has been dissolved.

Mr. P. S. Stevens, chemist and druggist, Hoxton, has purchased the business of Mr. R. Tattham, family chemist, High-street, Dorking, Surrey.

On Saturday evening, March 17th, Mr. Joshua Allen, residing at 9, Bath-street, Poplar, was seized with violent vomiting and purging, accompanied with burning pain in the gullet and stomach, and all the symptoms of Asiatic cholera. Dr. G. C. Kernot, surgeon, of Crisp-street, Poplar, was immediately sent for, and found him suffering from an irritating poison. Upon inquiries, he found he had been persuaded by a man in the docks to eat a few castor-oil seeds, which at once revealed the cause of the illness.

A STRANGE ANATOMICAL PHENOMENON has just occurred at Tournay. A post-mortem examination of a young non-commissioned officer who had died in the military hospital has shown that all the internal organs were reversed—thus, the heart was on the right side and the liver on the left, &c. Despite that peculiarity, probably unknown to the young man himself, he had always excellent health, and died ultimately of typhus fever.—*Indépendance Belge.*

GAZETTE.

BANKRUPTS.

COLEMAN, W. H., Malvern-road, Dalston, wholesale perfumer.
FRANCIS, THOMAS, Llanidlo, druggist.
HEATH, JOHN HENRY, Fulham-road, chemist's assistant.
HICKLING, WM. POTTER, Bristol, chemist.
JOYCE, J. B., late of Coleford, Gloucestershire, chemist.
MARRIOTT, THOMAS, late of Mottingham, botanic druggist, Nottingham.
NEWMANE, HENRI, Birmingham, perfumer.
POWELL, WILLIAM EDWARD, Farnham, surgeon.
RYLEY, HENRY, Sutton Benger, Wiltshire, physician.
SUTCLIFFE, T., Walsden, near Todmorden, and Summit, near Littleborough, Lancashire, drysalter.

PARTNERSHIPS DISSOLVED.

BENNETT, W. H., and G. A., RINGELSEN, London, wholesale perfumers.
CALEY and KNIGHTS, Norwich, chemists.
CROSFIELD BROTHERS and Co., St. Helen's, Lancashire, alkali manufacturers.
DAVY, MACKMURDO, and Co., Upper Thames-street, manufacturing chemists; as far as regards E. Mackmurdo.
DENNE and TAYLOR, Camberwell-grove, surgeons.
DREW and DUKE, Dover, surgeons.
DUNCAN, CAMPBELL, and Co., Old Ford-road, manufacturing chemists.
GARLICK and CUFF, Great James-street, Bedford-row, surgeons.
HOCKIN, WILSON, and HOCKIN, Duke-street, Manchester-square, chemists; as far as regards C. HOCKIN.
SISSONS and RHODES, Huddersfield, surgeons.
TASSELL, R., and SADLER, H. G., Canterbury, surgeons.
THOMPSON, E., and FALLOFIELD, J. W., Thame, Oxfordshire, chemists.
TROUGHTON, C., and Co., Liverpool, chemists.
WALLIS, C. C., and LARCOMBE, S. S., Castlebury, Somersetshire, surgeons.

THE CHEMIST AND DRUGGIST

LONDON, APRIL 14, 1866.

CORRESPONDENCE.—All communications should be addressed to the Editor, at 24, BOW-LANE, E.C.; those intended for publication should be accompanied by the real names and addresses of the writers.

QUERIES.—The Editor cannot undertake to attend to those which are anonymous, or to send answers through the post.

SUBSCRIPTION.—The subscription to the CHEMIST AND DRUGGIST is 5s. per annum, payable in advance. Should a receipt be required, a stamped envelope must be sent with the amount of subscription. A specimen number may be had upon application, price 6d.

POST OFFICE ORDERS.—Post-Office Orders to be made payable at the General Post Office to the Publisher, JAMES FIRTH, who is alone authorized to receive accounts.

SCALE OF CHARGES FOR ADVERTISEMENTS.

	£	s.	d.
One Page	4	0	0
Half ditto	2	10	0
Quarter ditto	1	10	0

Special Rates for Wrapper, and the pages preceding and following literary matter.

The above Scale of Charges will be subject to a discount of 10 per cent. upon Six, and 20 per cent. upon Twelve insertions—*if paid in advance.*

	£	s.	d.
Seven Lines and under	0	4	6
Every additional Line	0	0	6

Advertisements of Assistants Wanting Situations (not exceeding 12 words) inserted at a nominal charge of 1s. each.

The CHEMIST AND DRUGGIST is published on the Fifteenth of every month, except when that date falls upon a Sunday, when it is published on the preceding day. It is regularly supplied direct to the Members of the Trade in Great Britain, Ireland, the Colonies, and all the principal seats of foreign commerce.

Everything intended for insertion in the current Month must be sent in before the 10th, except Employers' and Assistants' Advertisements, which will be received until 9 A.M. on the morning previous to publication.

TRADE LEGISLATION.

THE letter addressed by the President of the Pharmaceutical Society to the President of the United Society will be read with satisfaction by all who think that efficient legislation for chemists and druggists cannot be secured while the two bodies are at variance. Though Mr. Sandford does not state that his council are willing to co-operate with the executive committee of the United Society, he intimates that they will gladly assist the Government in arranging an efficient and liberal measure for the settlement of the question. Of course we should like to know the exact compass of the council's "liberal views," but as their president recognise the rights of every person governed to have a voice in the governing body, we do not believe that they will oppose any just measure.

We agree with Mr. Sandford in thinking that it would be useless, unwise, and impolitic to urge the Government to introduce a Bill during the present session; we agree with him in thinking that a mere "Poison Bill" would be mischievous; and we confess that our imagination, like his, cannot accept the supposition that there will ever be two societies established by law for the same object.

ADULTERATION OF BUTTER.

UNDER the appropriate heading of "A letter from Rascaldom" our spirited contemporary *The Grocer* publishes the following communication received from a Mr. Frith in exchange for the sum of five shillings. It is copied from the original *verbatim et literatim* :—

"Chemical
"Laborotory,
"London. Mar. 8.

"Sr. I am in reciept of your note of yesterday and have much pleasure in forwarding you my process for Adulterating Butter. I describe the process as conducted in the laborotory; of course the practical man will adapt his arrangements to suit the scale of his operations. To begin with the ingredients
are Genuine Butter, potatoes, and fat; the following tal
estimates the articles at their highest prices; the prcent.
Butter might be increased if a superior butter was requir
or vice versa, but experience will be the best guide :—

	P. cent.	ozs.	cost.
Butter	50	8	7½
Fat	20	3¼	1
Potatoes	29	4½	½
Salt	1	¼	
	100	16oz.	9d.

"The Butter that is best is Irish or American inferior qual
to that mentioned might be used. The fat I recommend
Beef or mutton (and to be melted most carefully at a l
temperature so as not to burn, and in an earthen or enamel
vessel as Iron would be partially decomposed by the heat
fat and produce a disagreable taste and smell when mel
stir into it about 25 p. cent. of Water, which will carry of
impurities held in solution; then set it to cool. The potat
to be the best to be got the floury sort are best carefully
and cook them then while still warm rub them thro a
siev, so that their Cannot possibly be any lumps; the wh
articles are now to be carefully conglomerated together
potatoes still warm but the butter and fat cold especial
must be taken here that each substance is lost in the othe
upon this part of the operation depends the chance of de
tion the butter must not be any warmer than mixing it ren
it if melted though it may mix or blend better it beco
grainy pack it while Still Soft in the Tubs or vessels used
Storing it and when cold it will cut out beautiful wishing
success.

"I am, Sir, Your Respt.,
"W. A. FRITH

THE SALE OF STEEDMAN'S SOOTHING POWD SINGLY.

WISHING to know whether chemists could legally sell St
man's soothing powders singly, Mr. Young, of Ball's P
road, wrote to the Commissioners of Inland Revenue for
opinion, and obtained the following reply :—

"Inland Revenue, Somerset House, Lon
6th March, 1866.

"Sir,—The Commissioners of Inland Revenue have
before them your letter of the 26th January last, reque
to be informed whether it is legal to open a stamped p
of 'Steedman's Soothing Powders,' and retail the pow
separately.

"In reply, I am directed to acquaint you that in stric
a penalty is incurred by selling any of the powders in
tion, under the circumstances mentioned, without a p
stamp.

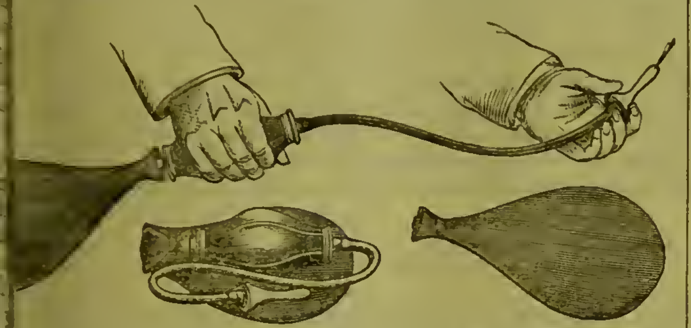
"I am, Sir, your obedient servant,
"T. SARGEN

THE PUBLIC MEDICAL SERVICES.—From an interesting
of the committee on army and navy medical officers' aff
appears that the total number of candidates examined f
Army Medical Service since 1856 is 922. Of these 713
passed and 209 rejected. The total number of cand
examined for the Naval Medical Service since 1856 is 5
whom only 389 were found qualified. During the past
there were only 17 candidates, of whom seven were rej
That there is no scarcity of medical men is evidenced
the returns of the Royal Colleges of Surgeons of Lo
Edinburgh, and Dublin, showing that these instit
respectively passed in the preceding year 402, 147, an
making a total of 680, and there is no doubt this numb
be increased during the present year, as only on Saturd
no less than 108 gentlemen commenced their primary ex
tions in anatomy and physiology at the London Col
Surgeons, and a like number will offer themselves on
day next. That the public medical service is distast
the profession is shown in the small number entering,
the large number of resignations after, as since 1850 up
present time no less than 137 medical officers have l
Royal navy, and during the same period 117 have volu
left the army, even after 17 years' service. The aver
of army assistant-surgeons on promotion to the rank
surgeon, for the last 11 years, has been 33 years, a
average length of service 9½ years.

NOTES OF NOVELTIES

THE IMPROVED PORTABLE ENEMA AND INJECTION APPARATUS.

This apparatus has been introduced by Messrs. Savory Moore. It consists of a simple india-rubber syringe, panding and charging itself by its own elasticity, and able of being compressed and emptied by the pressure of hand. This is connected with a flexible india-rubber or reservoir, made to contain the fluid to be injected, easily detached for the purpose of filling it. The quan- of fluid required for an ordinary injection can be con-



ed in the flexible bag; but should a larger amount be red, the use of the reservoir may be dispensed with, the a-rubber entrance-tube being placed in the vessel of id.

he advantages offered by this apparatus over all others, from its extreme simplicity of construction, portability, great convenience in use.

he amount of liquid employed can be varied to any nt at pleasure. The apparatus is equally applicable for administration of enemas and vaginal injections.

or domestic use it is peculiarly adapted. It occupies but e space, and, from its extreme compressibility, it may be ed away in a portmanteau or travelling-bag in a form liable to attract observation, being enclosed in a small erproof covering resembling a sponge-bag; and when the rvoir is filled with fluid it can be carried in the pocket of essing-gown, so as to be used with the utmost privacy.

s there are no metal reservoirs, rigid pistons, screws, or tions, the apparatus is not liable to get out of repair. an be easily cleaned by passing a little warm water ugh it.

NOTES AND QUERIES

GELATINE FOR BOTTLE CAPSULES.

ir,—Under the above heading I saw some notes from Haselden recommending its use instead of metal for le capsuling. For some length of time past we have using glue for the same purpose in exporting our ral ether and other similar volatile spirits, and with ed success. I suggest glue in place of gelatine as being economical and not so liable to crack. Glycerine ld certainly be a preventative for the latter fault, and ugh the cost would be very small in addition to the tine, yet still when some thousands of bottles have to psuled, it becomes a consideration.

Yours truly,

W. Cook.

Devonshire Square, Bishopsgate, E.C.

ispenser.—As an ounce of water contains 437.5 grains, pecific gravity required is obtained by a simple rule of e sum

$$437.5 : 503.125 = 1.000 : x$$

D. (Trowbridge) Oliver's "Lessons on Elementary ny," published by Macmillan and Co., price 4s. 6d., is xcellent work.

H. G. (Liverpool) sends us the following query:—"Is there in print a price-book of a more convenient pocket size than Goddard's, such as Henly's, by Silverlock, which is now out of print?"

We shall be glad to learn the address of Mr. Seymour, chemist, late of Taunton.

REVIEWS

ANIMAL CHEMISTRY.

Lectures on Animal Chemistry, delivered at the Royal College of Physicians. By William Odling, M.B., F.R.S., etc. Longmans, Green, and Co. Price 4s. 6d.

In the spring of last year Dr. Odling delivered, at the Royal College of Physicians, a course of six lectures on Animal Chemistry, full reports of which were soon afterwards published by our scientific contemporary, the *Chemical News.* These reports have been carefully revised by the lecturer, and are now issued in an elegant volume.

Dr. Odling trusts that the book will not be considered over-technical by any class of readers. He states that while preparing and revising his lectures his constant object has been to give such an account of modern Organic Chemistry as should, with a moderate amount of attention, be profitable and even interesting to those who are not chemists. He has striven, he says, to render his subject popular, in the legitimate sense, by making it generally intelligible.

Those who are familiar with the author's previous works need not be informed that he has attained his object, and thrown a brilliant light upon the most obscure parts of organic chemistry. Dr. Odling is one of the few expositors of scientific subjects whose writings have all the graces of fine literature. He invariably expresses his ideas with felicity and force, and never pens a clumsy or intricate sentence. We may seek in vain for his equal in literary ability among English chemists, who as a rule are careless and feeble writers. His only peers in the scientific world are those masters of style and composition, Professors Huxley and Tyndall.

The work before us is a striking example of the clear presentation of an abstruse subject. The explanations given of the origin and metamorphoses of the complex substances which occur in the animal body may be read with profit by the most advanced chemists, yet they are adapted to the comprehension of every good reader. Each part of the subject is gradually disclosed in logical and intelligible sentences, and the reader is led step by step from the first principles of chemical philosophy to the most recent conceptions respecting the phenomena of animal life.

The first lecture is mainly devoted to a consideration of the structure and mutual relations of the typical hydrides and their derivatives. In the second the doctrine of residues is expounded. The complex character of organic bodies is shown to be more apparent than real, as most of them may be resolved into comparatively simple molecules, which are capable of being distributed into certain well-defined groups and series. Thus salicin, by an absorption of water, breaks up into the less complex bodies, saligenin and glucose; while populin, under similar circumstances, breaks up into saligenin, glucose, and benzoic acid. In the third lecture the mode in which the complex molecules are produced is lucidly explained. In the next, the phenomena of animal and vegetable life are viewed in relation to the external forces of the universe. According to the modern doctrine, which Dr. Odling so forcibly expounds, force, like matter, is indestructible. It may be accumulated, but not created—be dissipated, but not destroyed. The force of every kind, active or latent, existing in the earth, at any given moment, is only the sum of the force received by the earth from the sun in excess of the force radiated back from the earth into space. The vegetable organism may be regarded as a machine in which the sun's energy is absorbed in the pulling apart of carbon and hydrogen from oxygen. The light and heat force emanating from the sun is rendered latent in the separated oxygen and carbo-hydrogen, just as human muscular force is rendered latent in a stretched cross-bow. When the separated carbo-hydrogen, in the form of some vegetable product, is recombined with the evolved oxygen, as in burning coal or wood upon the fire, or in consuming bread and oil and wine in the animal frame, the heat liberated in both instances is nothing more than the heat of the sun which had been stored up in the carbo-hydrogen and oxygen respectively. Conversely, the animal frame may be regarded as a machine, in which the sun's energy is set free in the form of heat or motion by the re-combination of that oxygen and carbo-hydrogen, in the pulling apart of which it had been absorbed or rendered latent.

Dr. Odling does not recognise the agency of any special vital force in the phenomena of life. He states that the enormous number and variety of animal and vegetable compounds are produced out of carbonic acid, water and ammonia, not by any peculiar vital force, but merely by the light and heat force of the sun acting through organic machinery. Hundreds of these compounds, he says, have already been formed artificially by the chemist in his laboratory. The illustrations given of this power of constructing organic compounds artificially are particularly interesting.

In the fifth lecture, the dynamic value of muscle oxidation is considered. The amount of motion producible by the oxidation of muscle cannot be estimated with any degree of exactitude; but the results of Dr. Odling's calculations reveal the superior economy of muscle over any artificial contrivance as a motive machine. It appears that by burning, or consuming, or oxidating a given weight of muscle in our bodies, we obtain a quantity of available motive force which could only be produced by the combustion of at least five or six times its weight of coal in the most perfect steam-engine that was ever constructed. An examination of the intermediate products of tissue-metamorphosis is included in this lecture. In his sixth lecture, Dr. Odling gives a long account of uric acid and the products derived from it, and concludes his course with some interesting and suggestive remarks on the chemical action of alterative medicines. He calls attention to the fact that those mineral substances which act more especially as alteratives—namely, iodine, arsenic, mercury, and iron—are characterised, not by their chemical energy, but by their chemical mobility. Thus it is this latter property which chiefly distinguishes iodine from its more active congeners, chlorine and bromine. Chemically, 58.5 parts of chloride of sodium are just as efficient as 166 parts of iodide of potassium; but while most people are in the habit of taking fifty or sixty grains of common salt twice or three times a day, nobody would like to take 166 grains of iodide of potassium even once in the same period.

We cannot conclude this notice without expressing our thanks to Dr. Odling for the enjoyment which his delightful lectures have afforded us. B.

CHEMICAL HANDICRAFT.

Chemical Handicraft: a Classified and Descriptive Catalogue of Chemical Apparatus, suitable for the performance of Class Experiments, for every process of Chemical Research, and for Chemical Testing in the Arts. Accompanied by copious Notes, explanatory of the Construction and Use of the Apparatus. By John Joseph Griffin, F.C.S. Illustrated by upwards of 1500 woodcuts. Pp. 472. Price 4s. Griffin and Sons, Garrick-street, W.C.

Though this work is in the main a Price Current of Chemical Apparatus, it affords the information that is usually obtained from special treatises on Chemical Manipulation. In the words of the compiler, "if its commercial character were separable, the residue of the work might fairly be considered a Report on the Apparatus which the Philosophical chemist has at present at command, to aid his original researches, or to demonstrate the truths adduced in his teachings." We are informed that the materials for the work have been collected from all parts of Europe, with much cost and labour, and that considerable time has been spent in trying the instruments one against another, and in making modifications and improvements.

Every conceivable article required by the chemist in the laboratory or the lecture-room is accurately described. Nothing that can facilitate chemical handicraft is disregarded. Thus, the tools required for making and repairing apparatus, for glass-blowing and metallurgic operations, are plainly set before the reader.

Some idea of the scope of the work may be obtained
the principal headings under which the articles are descri
Apparatus for Mechanical Operations—Supports for A
ratus—Weighing and Measuring—Thermometers for Che
Use—Apparatus for Determining the Specific Gravit
Liquids—Pneumatic Apparatus for Chemical Use—Appa
for the Production and Application of Heat—Vessel
Preparing Solutions—Bottles for Chemicals—Filtration,
colation, and Edulcoration—Evaporation—Distillation—
Preparation and Examination of Gases—Application of
mical Tests—Volumetric Analysis—Blowpipe Appa
and Apparatus for Micro-Chemical Operations—Appa
for Assaying and for Metallurgic Operations in Gene
Marsh's Arsenic Test—Organic Analysis—Collection
Cabinets of Chemical Apparatus—Specimens of Min
illustrative of Mineralogy, Geology, and Metallurgy—
Chemical Tests—Chemical Books.

The more important articles (some 1500) are picto
represented. The greater number of the figures have
trated previous works by the author, but more than 600
been drawn from the instruments expressly for this vo
The notes explaining the construction and use of the app
supply much valuable information, and give the work it
tinctive character, as a treatise on Chemical Handicraft

BOOKS RECEIVED.

The Year-Book of Pharmacy: a Practical Summ
Researches in Pharmacy, Materia Medica, and Ph
ceutical Chemistry during the year 1865. Edit
Charles H. Wood, F.C.S., and Charles Sharp.
Churchill and Sons.

On the Nature, Cause, and Treatment of Tuberculosis
Horace Dobell, M.D., etc. John Churchill and S

The Alkaline Permanganates, and their Medicinal Uses
John Muter. John Churchill.

An Introduction to Practical Chemistry, including An
By John E. Bowman, F.C.S. Fifth edition. Edi
Charles L. Bloxam, F.C.S., etc. John Churchi
Sons.

The Chemical Testing of Wines and Spirits. By J
Griffin, F.C.S. J. J. Griffin and Sons.

A Dictionary of Practical Chemistry, etc. By Henry
B.A., F.C.S. Part xxxiii., Phosphorus—Pot
Longmans, Green, and Co.

The Toxicologists' Guide: a New Manual on Poiso
John Horsley, F.C.S. Longmans, Green, and Co.

Correspondence

LATE HOURS OF BUSINESS.

TO THE EDITOR OF THE CHEMIST AND DRUGGIS

Sir,—The excellent letter of Mr. Lowe in your last
will be read by all your subscribers with great sati
Will you kindly allow me to address a few words
brother assistants on the same subject? We are a
aware that a great difficulty exists in inducing empl
adopt uniform hours in which trade shall be car
With very few exceptions they, with us, would be
ingly pleased to abridge the hours of toil, could th
without pecuniary loss; but owing to various ca
unable to carry out the reform.

A universal desire to shorten the hours of busines
to most pleasing results among drapers, grocers, st
and, in fact, most trades where close applicatio
counter is unavoidable. But druggists are told
articles sold by them are liable to be wanted at a
and that they must keep their shops open late.
principle we ought not to close *at all.*

Isolated cases *will* occur when an inopportune
may arise, but for a person to leave his bed to
"pennyworth of castor oil" is out of all reason.
that I shall be believed by the whole of the trad
say that it is while an *appearance* of business is kep

istom is induced. I can give an illustration of this from y own actual experience, although it is scarcely needed. A w weeks since business of a character unconnected with ie trade confined me to the counter until nearly two o'clock the morning. There was but little gas burning, and the op-door, though closed, had not been secured. To my rprise the door was opened at *half-past one* by a respect- le-looking man, who without any apology or allusion to e hour, coolly asked for a "pennyworth of yellow basi- on." He had seen the light, and, of course, concluded at the chemist was "at it" still. Some time since among e small hours of the morning my sense of hearing was pealed to so powerfully by the "night bell," that I shook the "drowsy god," and went down to the door; it was a se of "castor-oil," and no doubt it was required; but that s not the end of it; for while I was serving the article a ll-clad man, accompanied by a young woman, stepped in, d asked to look at "*some smelling bottles.*" Here, again, e light in the shop, although a temporary one, had racted the "moths" and they saw no inconsistency in king over a druggist's stock two hours after midnight.

The public cannot be surprised at our wish to be relieved a reasonable hour from business, a boon which is granted thousands of assistants in other branches of trade, and, I sure, that our claim to be placed on the same footing as iers is but just and reasonable.

Seeing, then, that the masters cannot carry out a plan, y not let the men try? I serve a most excellent master self, who is fully aware of my writing these lines, there- e I may speak out with greater boldness. I believe, most cerely, that "strikes," as they are called, are most in- ious in their nature; but the "strike" I propose would, carried out with perfect "unity" among us assistants, ve a boon both to ourselves and our masters. Let there a United Society of Druggists' Assistants, who will dge themselves on and after the 1st of October next to er into no engagement with an employer who declines to sent to a complete *non-appearance* of business at eight lock in the evening, summer and winter. Every reason- e young man (and it is to be hoped most of us deserve t modest title) will, however, see that this arrangement st be conditional to a certain extent. Epidemics may vail, illness of an employer, and other circumstances ally uncontrollable may occur, but when the general lth is up to the average the regulation shall be maintained. ow, I have got to prove that this "strike" will be an antage to our employers as well as ourselves. I ask this ple question. Are we not "giving the governors a turn" enabling them to escape anything like censure, if censure re be, in closing their establishments at eight o'clock, ng to a universal association among chemists' assistants bring their services to a conclusion at the hour in ques- ? If I go on to say that their gas bills will be dimi- ied, that their own health will be maintained, and that minds of those who serve them may have greater oppor- ties of improvement, I think I have proved my case, and wn that the "good turn" is theirs most unquestionably.

What is wanted, then, among us as assistants is "perfect y" in the matter; let all who have served a regular renticeship to the business (the best assistants, of course) a declaration to the effect named. There is nothing in movement that I can yet discover approaching to dis- ect to those in the position of employers, and if the s of business are ever to be shortened, I confess I can o other way.

e will suppose for a moment that the arrangement is e, and that hundreds of young men now serving with ence and trustworthiness their respective employers find st of October at hand, need there be any fear, I ask, they will be called into the counting-house to receive a ue for their last quarter's services, and a discharge at the time?

st at this particular period no one will deny that tants (really and truly helpers) are difficult to obtain, uld not urge this fact as an inducement to a "strike" reduction of the hours of labour, but it would be ense to say that such circumstance renders the time in way unsuitable.

e point I wish to draw attention to most particularly is, ecessity of a *non-appearance* of business; simply this, ig the door at eight o'clock instead of ten (surely no employer keeps open beyond that hour), the light which operates as I have said to create a demand to be extinguished, and all articles supplied after the shop is closed to be obtained by ringing the "night bell." Of course every druggist who values his connexion will take care that some capable person should be always at hand, but that regulation would not differ from the present system, *four* might be relieved, while *one* could do all the duty.

I have said nothing as to apprentices for obvious reasons. They are not free agents, and, consequently, incapable of aiding in the movement; the "Association" would, however, be sure of their support when emancipated.

I shall be very pleased if these few hasty lines have the effect of inducing suggestions more valuable; in the "multitude of counsel there is wisdom," and I hope before another winter some plan of reform will be carried out by which all may derive benefit.—I am, yours, etc.,

April 2, 1866. ANTI-SLAVERY.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—The letter of Mr. Lowe in your last number deserves more than a passing notice, and in resuming the subject I am giving utterance to my own deep conviction, founded upon my own personal experience of the formidable obstacle which long hours of business puts in the way of evening study. In every direction we see chemists' shops kept open hours after most of their neighbours' shops are closed, to the mental and physical detriment of all connected with them.

The young men of most other professions or trades have already secured the evening to themselves, besides, in many cases, the half holiday on Saturday, and, in all cases, the whole of Sunday. The assistant of the drug trade is told to study, but he says to himself, "When?" He is advised to study chemistry, pharmacy, materia medica, and botany; to acquaint himself with the practical manipulation of the laboratory, and the dispensing counter, the manner of ascertaining the strength and purity of drugs, the tests and antidotes for poison, the doses of ordinary medicines, and the language of prescriptions; but he says to himself, "How?" The assistant cannot study. He has neither opportunity nor time. The swiftly gliding years yield for him no refreshing hours for mental cultivation. No class of young men are more deserving, or stand in greater need of the benefit of early closing than chemists' assistants. The very nature of their profession is such as to require the utmost tension of the mental faculties in order accurately to discharge so important a duty as dispensing of medicines. No other business demands a larger, if, indeed, an equal expenditure of time; no other honourable occupation entails severer assiduity, or more scrupulous attention. It will, therefore, be obvious to all, that in order to relieve the monotony and anxiety which the discharge of such duties entail, occasional relaxation is not only advisable, but essentially requisite.

Complaints are frequently made of the incompetency of many assistants, and of the difficulty of getting such as are thoroughly qualified for all the duties they may be expected to perform. We know there is something more to learn than the mere routine of shop work if we expect to take a good position among the many well-educated members of the trade of the present day. But so long as assistants are kept at work from seven o'clock in the morning until ten or eleven o'clock at night, so long will masters have to complain of their deficiency. Give the assistant fair play. Set him at liberty before his wasted energies are exhausted, and you will hear no more of his deficiencies.

Another important question is that of Sunday trading. It is a well known fact that if all the amount of Sunday work which would require to be done, if only what could not be postponed without injury to the sick were undertaken, is very small, and it is very painful to think how many young men lose their Sundays, alike as rest to mind and body, and days of spiritual refreshment and communion with God, in order that a few persons may be supplied with little things that might have been purchased during the week.

A Sunday may be well spent in many ways besides in church, but I know few less satisfactory ways of spending it than in satisfying trivial demands behind a druggist's counter.

In many other respects we are on the road for improvement, and I cannot see any reason why an effort should not be made in order to remedy this state of things. We see the laws regulating the medical profession raising day by day the standard of medical education, and I have no doubt that, as a trade or profession, a great future is before us. Let us see that everything is done to hasten its fulfilment.

I beg to remain yours very truly,
Dudley. HENRY FISHER.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—The remarks of Mr. Lowe in your last under the above heading are very good, but impracticable, unless those in the business will *honestly* co-operate. Instead of charging one shilling and two shillings and sixpence for attendance after business hours, perhaps sixpence and one shilling would suffice. The fees thus collected might be given to some local charity, and this being known the public, unless very charitably disposed, would do their business at reasonable hours. This would show that the chemists were above making an extra charge from a mercenary motive.

If the shop-bell is not answered you run the risk of refusing assistance when much needed, and although the profits of late customers may not be of consideration, still if they get accommodated at a rival establishment they will be inclined to patronise the same at other times. Chemists generally (perhaps from poverty) put up with demands on their time and attention for much less remuneration than any other class of traders.

I find it a very common occurrence for my bell to be rung for articles which, if thought of at proper hours, the grocer would be applied to for, but his quiet must not be disturbed after the shutters are closed. Also, if several shops are to be visited in the evening, the chemist's is made the last.

Some time ago I entered into a friendly arrangement with the only other chemist in the town respecting a scale of prices, and for checking late customers. It was an understanding that no one should remain at home for the purpose of trade, but on an emergency we could be sent for, or the customer be requested to call again; but if we were within we could not well refuse. This, if honestly carried out, would have done much to remove the evil. I subsequently found that, although shutters were put up at the appointed hour, my competitor or his assistant made a rule of always being at home to attend to customers, many of whom finding no one to supply them at my shop went to him, and to whom he was extra polite and obliging. The result is, either myself or assistant is now obliged to forego the pleasure of attending a winter's evening lecture, or a summer evening walk. From a somewhat similar cause I was obliged to abandon the arrangement respecting prices. If your correspondent can hit upon a remedy for this state of affairs he will be a benefactor to a vast number of masters, assistants, and apprentices, and deserve a first-class testimonial.

Yours truly,
A SUFFERER FROM LATE HOURS.
March 22, 1866.

THE UNITED SOCIETY'S FESTIVALS.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—Knowing it to be a prevailing opinion that the annual festival of the United Society should be held much earlier than it was last year, I beg, through your columns, to suggest one or two reasons in support of that opinion.

The festival is designed to be the occasion of a yearly meeting of the members, and as such it is very desirable that it should be arranged to take place at a time when the delegates and visitors from the country find it most convenient and agreeable to attend.

It may not be expedient or even practical to revert to the spring season, but I see no reason why it should not be held in July. In that month tradesmen think about their annual holiday; excursions and cheap trips are then rife between the metropolis and the provinces; Parliament is not yet prorogued, so that those who delight in senatorial eloquence may have the chance of a treat; and, if needful, deputations may wait upon Government or members of the Legislature in greater numbers and at less cost than at any other period.

Should the annual gathering be deferred until August or September, many gentlemen who might otherwise attend will be found at watering places with their families, which they will not leave until the holiday is spent. Then in October, when the cheerful fire appears in the parlour, and the shortening days and chilling winds of autumn set in, they will be far more disposed to settle down to business at home t go to London upon volunteer legislation.

In as few words as possible, I have tried to expr judgment of our country members upon this important tion; and I have too high an opinion of our executiv mittee to suppose otherwise than that they will endea comply with their wishes.

I am, Sir, your obedient servant,
WILLIAM A. Y
254, Goswell-road, E.C., April 7th, 1866.

IS CHLORODYNE SUBJECT TO A MEDI STAMP?

TO THE EDITOR OF THE CHEMIST AND DRUGGIST

SIR,—I beg to hand for publication the subjoined spondence for the general information of the trade relative to a public announcement by Mr. T. Barl Weymouth, stating that he had received an intimatio the Inland Revenue Office that the chlorodyne sold was not liable to the patent medicine duty.

I applied for this information that I might be able a reply to several communications I had received subject. The decision of the Commissioners of Revenue is quite conclusive; that no remedy un term "Chlorodyne" can be sold without the Gov stamp. Yours truly, J. T. DAVEN
33, Great Russell-street, Bloomsbury-square.

"To the Commissioners of Inland R

"GENTLEMEN,—You will greatly oblige by informing me why dyne," prepared by Mr. T. Barling, is exempt from patent duty?

"I beg to inform you, as on a previous occasion, that 'Chlorodyne' was coined by Dr. J. Collis Brown to re particular remedy advertised largely as a cure for certain diseas

"Now, your reply to me on December 22, 1865, states that cannot be sold under any circumstances without medicine d irrespective of the wording of the label, therefore I trust yo consider me intrusive in asking the reason of the exempti case of Mr. Barling, whose preparation is a secret remedy, and the full understanding that it possesses the properties of th chlorodyne of Dr. J. Collis Browne, whose medicine is gene scribed and ordered simply as chlorodyne, same as advertis Barling.[*] (See enclosed handbill.)

"I beg further to state that I solicit this information on many in the trade who have written to me for an explanatio exemptions with chlorodyne are allowed, it will lead to much and evasion of duty, whereas the decision recently announce Honourable Board, that chlorodyne, under any circumstances, medicine duty obviates all difficulty in the matter.

"You will readily perceive how unjust it would be to allo article to be duty free, whilst the original and only genuine w taxed. "I am, gentlemen, your very obedient servant,
(Signed) "J. T. DAV
"33, Great Russell-street, Bloomsbury-square."

[REPLY.]

"Inland Revenue, Somerset House,
"March

"SIR,—The Board were not aware until the receipt of you the 15th instant of the nature of the handbill issued by Mr. I Weymouth, in reference to chlorodyne.

"The Board are of opinion that the preparation prepared a under the designation of "Barling's Chlorodyne" is lia medicine stamp duty, and they have so informed Mr. Barling.

"I am, Sir, your obedient servant
(Signed) "T. S
"To Mr. J. T. Davenport."

TRADE REPORT.

THE sales in Chemicals have been of quite a retail and without much change in prices. Business, h all departments is very much depressed, and in an to force sales considerably lower prices would h accepted. Tartaric Acid remains at 17½d.; a business done in Citric Acid at 2s. to 2s. 0½d. steady at 12½d. Chlorate is quiet at 14½d. to 15d. mate is rather lower, sales made at 5¾d. to 6d. Pr Potash is quiet at 13¼d. to 13½d. Sal Acetos at good business done in Iodine, and the price is now 8d. Quinine is quiet, and prices rather easier 5s. 3d., and French 4s. 11d. to 5s. Sulphate of dull at 27s. 6d. to 28s. Cream of Tartar is dull, lower. Soda Crystals are also a shade easier, a quiet at 3d. to 3$\frac{1}{16}$d. More doing in Sal Ammoniac at 35s. 6d. and 37s. 6d. for seconds and firsts. Sulphate of Ammonia is steady at 11s. 6d to 12s. Muriate of Potass dull and lower, sales made at 8s. 6d. Bleaching Powder is quiet at 13s. 6d. to 14s. No change in Flour of Brimstone. Turpentine is dull and lower; French 48s., and Russian 30s. Ashes are without change. Linseed Oil closed dull and lower at 40s. to 40s. 6d. Rape dull and easier. Petroleum is better at 2s. 1½d. to 2s. 2d.—a cargo of Crude sold for the Continent.

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[*] The bill referred to was forwarded to me by a wholesale information.

In the Drug Market business in all branches has been extremely dull, and prices, where sales have been forced, have been in favour of the buyer; Castor Oil, however, has brought freely ¼d., and in some cases ½d., advance. Citronelle Oil sold at 4d. to 4¼d. Oil Cassia is dull; and some Aniseed has been sold at 9s. 6d. cash, and short prompt. Camphor is dull, and the price has declined to £6, sellers. Malabar Cardamoms are rather cheaper. Cape Aloes are about 1s. lower. tar Aniseeds are fully 10s. to 20s. cheaper. Gums are forced p, without business; all the parcels offered were bought in; Gamboge, however, is dearer. Turkey Opium is 6d. dearer, orts mid. to fine at 15s. to 15s. 6d. Colombo Root, owing arrivals, is much lower. Galangal Root is steady at 13s. 6d. Rhubarb has been sold at former rates. Japan Galls are 6d. 2s. lower. Fine Tonquin Musk brings former rates. urkey Galls are 10s. to 15s. cheaper. Japan Wax is steady. ll kinds of Shellac are 5s. to 10s. lower. Bark is without hange. E. I. Tamarinds sold at considerably higher prices. ambier is 3d. cheaper. Sticklac is also rather lower. Saltetre is 3d. to 6d. lower; Refined, however, is still 27s. to s. 6d. Turmeric is fully 6d. lower; some fine Bengal sold 25s. No change in Senna. Balsam Capivi is dearer, sales ade at our quotations. Nux Vomica sold at 22s., being arer. Other goods no variation.

PRICE CURRENT.

These quotations are the latest for ACTUAL SALES *in Mincing ne. It will be necessary for our retail subscribers to bear in nd that they cannot, as a rule, purchase at the prices quoted, ismuch as these are the* CASH PRICES IN BULK. *They will, howr, be able to form a tolerably correct idea of what they ought to pay.*

	1866.	1866.	1865.	1865.
	s. d.	s. d.	s. d.	s. d.
GOL, Cape, per cwt.	70 0	90 0	75 0	100 0
rench	58 0	83 0	60 0	85 0
porto, red	40 0	43 0	45 0	47 0
icily	72 6	75 0	72 6	75 0
aples, white	68 0	75 0	68 0	76 0
lorence, white	90 0	95 0	85 0	90 0
red	80 0	85 0	80 0	85 0
ologna, white	90 0	95 0	90 0	95 0
ROWROOT..(duty 4½ per cwt.)				
ermuda..per lb.	1 3	1 5	1 6	1 8
. Vincent	0 2½	0 6	0 3	0 6
amaica	0 3	0 5	0 4	0 6
ther West India	0 2¼	0 3½	0 2½	0 3½
razil	0 2¼	0 3	0 2½	0 3
ast India	0 2¼	0 3½	0 3	0 4½
atal	0 4	0 7¾	0 4¾	0 8
erra Leone	0 3½	0 4	0 4	0 5
HES....per cwt.				
ot, Canada, 1st sort	35 0	0 0	31 6	0 0
earl, ditto, 1st sort	37 0	0 0	32 6	0 0
IMSTONE,				
ugh....per ton	155 0	160 0	152 6	155 0
ll	215 0	220 0	195 0	210 0
our	260 0	265 0	240 0	250 0
EMICALS,				
id—Acetic, per lb.	0 4	0 0	0 4	0 0
Citric	2 0	2 0½	1 10	1 10½
Nitric	0 5	0 5½	0 5	0 5½
Oxalic	1 0½	0 0	0 9¼	0 9¾
Sulphuric	0 0¾	0 1	0 0¾	0 1
Tartaric crystal	1 5½	0 0	1 6	1 6½
powdered	1 6½	0 0	1 7	1 7½
um ....per ton	150 0	155 0	130 0	135 0
powder	170 0	175 0	145 0	150 0
monia, Carbonate, per lb.	0 5¼	0 5½	0 5	0 5¼
Sulphate ......per ton	230 0	250 0	240 0	260 0
timony, ore	180 0	190 0	160 0	180 0
crude ......per cwt	24 0	25 0	26 0	0 0
regulus	35 0	0 0	34 0	35 0
French star	35 0	0 0	35 0	0 0
senic, lump	15 0	0 0	15 0	15 6
powder	6 3	6 6	6 3	6 6
eaching powder	13 6	0 0	11 0	11 3
rax, East India refined..	0 0	0 0	0 0	0 0
British	65 0	0 0	54 0	0 0
lomel ....per lb.	2 7	0 0	2 8	2 9
mphor, refined	1 7	1 8	1 7	0 0
pperas, green ....per ton	56 0	58 0	52 6	55 0
rrosive Sublimate, per lb.	2 2	0 0	2 3	0 0
een Emerald	0 0	0 0	0 0	0 0
Brunswick.... per cwt.	0 0	0 0	0 0	0 0

	1866.	1866.	1865.	1865.
CHEMICALS.	s. d.	s. d.	s. d.	s. d.
Iodine, dry .... per oz.	0 8	0 8½	0 6⅝	0 6¾
Magnesia, Carbon per cwt...	42 6	45 0	42 6	45 0
Calcined . per lb.	1 6	1 8	1 6	1 8
Minium, red ...... per cwt.	22 0	22 6	21 6	24 6
orange	32 6	0 0	32 6	33 0
Potash, Bichromate per lb.	0 6	0 0	0 6	0 6¼
Chlorate	1 2½	0 0	0 0	1 1
Hydriodate..per oz.	0 7	0 7½	0 6	0 6½
Prussiate....per lb.	1 1¼	1 1½	0 11¼	0 11½
red	1 9½	1 10	1 9	1 9½
Precipitate, red .... per lb.	0 0	2 8	2 9	0 0
white	0 0	2 7	2 9	0 0
Prussian Blue	1 0	1 10	1 0	1 10
Rose Pink ....per cwt.	29 0	0 0	29 0	0 0
Sal-Acetos ....per lb.	1 2½	0 0	0 11½	1 0
Sal-Ammoniac ....per cwt.				
British	35 6	37 6	36 0	37 6
Salts, Epsom	8 3	8 6	9 0	0 0
Glauber	4 6	6 0	5 0	5 6
Soda, Ash..........per deg.	0 3	0 3⅛	0 2	0 2¼
Bicarbonate..per cwt.	19 0	19 6	11 0	11 6
Crystals ......per ton	132 6	135 0	97 6	100 0
Sugar Lead, white per cwt.	38 0	40 0	37 0	37 6
brown	27 6	28 0	28 0	28 6
Sulphate Quinine....per oz.				
British, in bottle ..	5 3	5 4	5 6	5 9
Foreign	4 11	5 0	5 5	5 7
Sulphate Zinc......per cwt.	0 0	0 0	14 0	15 0
Verdigris............per lb.	0 11	1 0	0 11	1 0
Vermilion, English	2 11	3 3	3 0	3 4
China	0 0	3 9	2 6	2 8
Vitriol, blue or Rom. per ct.	27 6	28 0	27 6	0 0
COCHINEAL, per lb.				
Honduras, black	3 4	5 0	3 2	4 5
silver	2 2	3 9	2 8	3
Mexican, black	3 3	3 7	3 2	3 5
silver	3 0	3 2	2 11	3 0
Lima	0 0	0 0	0 0	0 0
Teneriffe, black	3 5	4 10	3 1	3 7
silver	3 3	3 8	2 11	3 1
DRUGS,				
Aloes, Hepatic ....per cwt.	100 0	170 0	100 0	200 0
Socotrine	140 0	290 0	160 0	290 0
Cape, good	40 0	42 0	42 0	44 0
inferior	24 0	39 0	25 0	40 0
Barbadoes	70 0	280 0	60 0	300 0
Ambergris, grey ....per oz.	24 0	30 0	22 0	24 0
Angelica Root ....per cwt.	20 0	35 0	20 0	35 0
Aniseed, China star	120 0	125 0	130 0	0 0
German, &c.	26 0	40 0	24 0	40 0
Balsam, Canada ....per lb.	1 4	1 5	0 10	0 0
Capivi	2 3	2 4	1 6	1 7
Peru	4 10	5 0	4 8	4 9
Tolu	2 10	3 0	3 4	0 0
Bark, Cascarilla....per cwt.	20 6	29 0	25 0	36 0
Peru, crown & grey per lb.	1 3	2 2	0 8	2 0
Calisaya, flat	2 6	2 9	2 10	3 4
quill	1 10	2 8	2 8	3 2
Carthagena	1 0	1 4	0 10	1 9
Pitayo	0 9	2 0	1 0	2 3
Red	2 9	13 6	3 0	11 0
Bay Berries........per cwt.	0 0	0 0	0 0	0 0
Bucca Leaves........per lb.	0 6	0 10	0 4	0 10
Camomile Flowers	20 0	100 0	20 0	70 0
Camphor, China	120 0	0 0	110 0	112 6
Canella alba	0 0	0 0	23 0	33 0
Cantharides ....per lb.	2 4	0 0	2 4	2 5
Cardamoms, Malabar, good	5 8	6 6	6 6	7 0
inferior	3 6	5 6	4 3	5 9
Madras	2 9	5 8	2 9	5 9
Ceylon	3 9	4 3	4 0	5 3
Cassia Fistula......per cwt.	15 0	41 0	16 0	25 0
Castor Oil, 1st pale ..per lb.	0 6½	0 7	0 6½	0 7
2nd	0 0	0 6¼	0 5½	0 6¼
inferior and dark	0 5¼	0 5½	0 4¼	0 5
Bombay, in casks	0 5	0 5¼	0 4½	0 4¾
Castorum	1 0	20 0	1 0	20 0
China Root ....per cwt.	30 0	33 0	18 0	21 6
Cocculus Indicus	30 0	36 0	25 0	27 0
Cod Liver Oil ......per gal.	3 6	6 6	6 0	13 0
Colocynth, apple ....per lb.	0 7½	1 1	0 8	1 2
Colombo Root ....per cwt.	200 0	320 0	90 0	130 0
Cream Tartar				
French	97 6	100 0	102 6	105 0
Venetian	102 6	105 0	105 0	107 6
grey	90 0	95 0	92 6	95 0
brown	90 0	92 6	90 0	92 6
Croton Seed	500 0	520 0	90 0	95 0
Cubebs	82 6	0 0	82 6	85 0
Cummin Seed	16 0	21 0	18 0	26 0
Dragon's blood reed	200 0	340 0	200 0	300 0
lump	95 0	280 0	90 0	260 0
Galangal Root	12 6	13 0	15 0	17 0
Gentian Root	16 0	20 0	22 0	23 0
Guinea Grains .... per cwt.	92 0	94 0	80 0	0 0
Honey, Narbonne	50 0	70 0	40 0	80 0
Cuba	25 0	35 0	25 0	33 0
Jamaica	30 0	61 0	26 0	60 0
Ipecacuanha ....per lb.	12 0	12 6	10 0	0 0
Isinglass, Brazil	2 2	5 4	1 9	4 7
East India	1 6	4 4	1 0	4 2
West India	3 9	4 2	3 0	3 6
Russian	7 6	10 0	8 0	11 0
Jalap	1 0	5 3	1 0	5 8

	1866.		1806.		1305.		1865.	
DRUGS—*continued.*	s.	d.	s.	d.	s.	d.	s.	d
Juniper Berries ....per cwt.								
German and French ..	8	6	10	0	7	0	9	0
Italian	9	6	10	0	9	0	10	0
Lemon Juice ......per deg.	0	0½	0	0¾	0	0½	0	0¾
Liquorice ....per cwt.								
Spanish	75	0	80	0	75	0	80	0
Italian	55	0	75	0	55	0	70	0
Manna, flaky	2	0	3	0	2	3	2	6
small	1	2	1	8	1	2	1	4
Musk ....per oz.	18	0	33	0	24	0	32	0
Nux Vomica	20	0	22	0	12	0	14	6
Opium, Turkey	13	6	15	0	15	0	15	6
Egyptian	0	0	7	0	0	0	0	0
Orris Root ......per cwt.	24	0	38	0	30	0	31	0
Pink Root .... per lb.	0	0	0	0	3	0	3	2
Quassia (bitter wood) per ton	100	0	0	0	70	0	0	0
Rhatany Root ......per lb.	0	5½	1	2	0	6	1	1
Rhubarb, China, round	3	0	11	0	2	6	7	6
flat	3	0	10	0	2	8	0	9
Dutch, trimmed ..	13	0	15	0	9	0	10	0
Russian	15	0	16	0	11	0	13	0
Saffron, Spanish	33	0	41	0	32	0	34	0
Salep.............. per cwt.	140	0	152	0	130	0	0	0
Sarsaparilla, Lima	1	0	1	4	1	0	1	4
Para	0	11	1	1	0	11	1	2
Honduras	0	9	1	7	0	11	1	6
Jamaica	1	1	2	3	1	4	2	3
Sassafras ....per cwt.	10	6	11	0	15	0	16	0
Scammony, virgin ..per lb.	30	0	44	0	30	0	35	0
second	14	0	23	0	12	0	23	0
Seneka Root	3	9	4	0	3	0	3	2
Senna, Calcutta	0	0	0	0	0	0	0	0
Bombay	0	4	0	5½	0	4½	0	6
Tinnevelly	0	4½	0	11	0	4	1	1
Alexandria	0	3	0	9	0	3½	0	8
Snake Root	3	6	0	0	4	3	4	9
Spermaceti, refined	0	0	1	2	1	0	1	1
Squills	0	1½	0	3½	0	0½	0	1
Tamarinds, E. India, per cwt.	48	0	56	0	16	6	17	6
West India	16	0	35	0	10	0	23	0
Terra Japonica—								
Gambier ....per cwt.	21	0	28	0	21	0	27	0
Cutch	28	0	33	0	20	0	29	6
Valerian Root, English	20	0	29	0	20	0	30	0
Vanilla, Mexican......per lb.	4	0	20	0	26	0	38	0
Wormseed..........per cwt.	0	0	0	0	11	0	12	0
GUM—Ammoniac, drop, per cwt.	120	0	170	0	120	0	170	0
lump	40	0	85	0	40	0	85	0
Animi, fine pale	210	0	270	0	210	0	220	0
bold amber..........	190	0	220	0	190	0	210	0
medium	160	0	180	0	160	0	180	0
small and dark	100	0	150	0	100	0	155	0
ordinary dark	40	0	95	0	40	0	95	0
Arabic, E. I., fine pale picked	30	0	95	0	82	0	90	0
unsorted, good to fine	62	0	78	0	64	0	76	0
red and mixed	46	0	60	0	50	0	60	0
siftings	25	0	40	0	25	0	40	0
Turkey, picked, good to fine	170	0	210	0	135	0	170	0
second and inferior.	95	0	160	0	65	0	120	0
in sorts	40	0	70	0	32	0	50	0
Gedda......................	43	0	55	0	39	0	40	0
Barbary, white	95	0	105	0	70	0	75	0
brown	80	0	90	0	45	0	48	0
Australian..................	37	0	56	0	34	0	41	0
Assafœtida, fair to good	40	0	85	0	28	0	60	0
Benjamin, 1st quality	340	0	900	0	550	0	950	0
2nd ,, ...	240	0	300	0	440	0	500	0
3rd ,, ...	50	0	240	0	80	0	940	0
Copal, Angola, red	80	0	90	0	70	0	82	0
pale	85	0	95	0	75	0	90	0
Benguela	67	6	90	0	55	0	80	0
Sierra Leone .. per lb.	0	4	0	11½	0	3½	0	11
Manilla...... per cwt.	28	0	50	0	24	0	40	0
Dammar, pale ......per cwt.	50	0	60	0	38	0	47	6
Galbanum..................	160	0	170	0	160	0	170	0
Gamboge, picked, pipe	400	0	460	0	250	0	390	0
in sorts	280	0	400	0	140	0	240	0
Guaiacum............per lb,	0	7	2	0	1	0	1	8
Kino .... per cwt.	300	0	500	0	300	0	500	0
Kowrie	25	0	85	0	23	0	65	0
Mastic, picked ...... per lb.	14	0	15	6	8	0	9	0
Myrrh, gd. and fine, per cwt.	130	0	100	0	130	0	180	0
sorts................	70	0	110	0	70	0	130	0
Olibanum, pale drop	75	0	82	0	75	0	80	0
amber and yellow	55	0	72	0	65	0	72	0
mixed and dark..	25	0	43	0	16	0	44	0
Senegal	90	0	110	0	75	0	85	0
Sandrac	90	0	110	0	75	0	100	0
Tragacanth, leaf	200	0	280	0	180	0	260	0
in sorts	70	0	180	0	80	0	100	0
OILS..................per tun	£	s.	£	s.	£	s.	£	s.
Seal	44	0	51	0	40	0	48	0
Sperm, body................	0	0	120	0	83	0	84	0
Cod	43	0	0	0	51	0	51	10
Whale, Greenland	0	0	0	0	0	0	0	0
South Sea, pale......	48	0	50	0	44	0	44	10
East India Fish......	37	0	37	10	30	0	0	0
Olive, Galipoli ...... per ton	50	10	57	0	51	0	52	0
	s.	d.	s.	d.	s.	d.	s.	d.
Florence, half-chest ..	0	0	0	0	0	0	0	0
Cocoanut, Cochin ..per cwt.	52	6	53	0	42	6	0	0
Ceylon	47	6	48	0	39	0	0	0
Sydney	41	0	46	0	32	0	38	0
Ground Nut and Gin.								
Bombay	48	0	0	0	38	0	0	0

	1806.		1806.		1865.	
OILS—*continued.*	s.	d.	s.	d.	s.	d.
Madras ....per cwt.	52	0	53	0	36	6
Palm, fine	42	0	43	6	30	0
Linseed	40	6	0	0	31	6
Rapeseed, English, pale	48	6	0	0	42	0
brown	45	0	0	0	40	0
Foreign pale	51	0	52	0	43	0
brown	46	0	0	0	41	0
Lard	78	0	0	0	60	0
Tallow	36	0	0	0	38	0
Rock Crude .... per ton	£19	0	0	0	£17	0
OILS, Essential—						
Almond, essential ....per lb.	52	0	0	0	0	0
expressed	1	11	0	0	0	10½
Aniseed	9	4	9	0	6	10
Bay ....per cwt.	90	0	0	0	0	0
Bergamot ....per lb.	9	0	13	0	10	0
Cajeputa, (in bond) ..per oz.	0	2¾	0	3½	0	2½
Caraway ....per lb.	5	0	6	6	5	6
Cassia	8	3	0	0	8	2
Cinnamon (in bond) ..per oz.	1	0	3	9	1	0
Cinnamon Leaf	0	4	0	0	0	6
Citronel	0	4	0	5½	0	4½
Clove	2	9	0	0	0	0
Croton	1	2	1	6	1	6
Juniper..............per lb.	1	9	2	0	2	0
Lavender	2	0	3	3	1	6
Lemon	7	6	10	0	7	6
Lemongrass..........per oz.	1	4	1	0	1	7
Mace, ex.	0	1	0	2½	0	1
Neroli	3	6	4	6	5	0
Nutmeg	0	3	0	8	0	1½
Orange ....per lb.	5	0	8	0	5	6
Otto of Roses ....per oz.	19	0	23	0	18	0
Peppermint, per lb.						
American	15	6	16	0	12	9
English	30	0	33	0	0	0
Rhodium ....per oz.	0	0	0	0	0	0
Rosemary ....per lb.	1	9	2	0	2	6
Sassafras	5	0	6	0	3	6
Spearmint	26	0	28	0	5	0
Spike	0	0	0	0	0	0
Thyme	1	9	1	10	1	9
PITCH, British ......per cwt.	12	0	0	0	12	0
Swedish	0	0	0	0	0	0
SALTPETRE, per cwt.						
English, 6 per cent. or under	22	6	23	3	28	6
over 6 per cent.	22	0	22	6	27	0
Madras	20	6	21	0	25	0
Bombay....................	17	0	21	0	22	0
British-refined	27	0	27	6	31	6
Nitrate of soda..............	13	0	14	0	14	6
SEED, Canary ....per qr.	40	0	48	0	36	0
Caraway, English .. per cwt.	32	0	34	0	0	0
German, &c.	32	0	34	0	0	0
Coriander	20	0	22	0	0	0
East India........	0	0	0	0	0	0
Hemp......................	44	0	40	0	44	0
Linseed, Black Sea..........	63	0	70	0	56	0
Calcutta	71	0	72	0	55	0
Bombay	73	0	74	0	57	6
Egyptian	03	0	64	0	55	0
Mustard, brown....per bshl.	0	0	0	0	5	0
white	0	0	0	0	10	0
Poppy, East India....per qr.	56	0	0	0	48	0
Rape, English	0	0	0	0	0	0
Danube	66	0	67	0	0	0
Calcutta fine..........	63	0	64	0	53	0
Bombay	73	0	74	0	64	0
Teel, Sesmy or Gngy.........	64	0	68	0	57	0
Cotton ....per ton	150	0	170	0	140	0
Ground Nut Kernels per ton	360	0	370	0	280	0
SOAP, London yel. .. per cwt.	28	0	32	0	20	0
mottled	32	0	36	0	34	0
curd	46	0	50	0	46	0
Castile	40	0	42	0	40	0
Marseilles	40	0	42	0	40	0
Soy, China ....per gal.	3	3	0	0	3	3
Japan	0	0	0	0	1	5
Sponge, Turkey, fine picked	14	0	18	0	19	0
fair to good	6	0	12	0	7	0
ordinary ..	1	6	4	0	2	6
Bahama ..	0	8	2	6	0	4
TURPENTINE, Rough, per ct.	0	0	0	0	0	0
Spirits, French	48	0	48	6	66	6
American, in casks	0	0	0	0	0	0
WAX, Bees, English	180	0	185	0	170	0
German	195	0	200	0	162	6
American	185	0	190	0	175	0
white fine	0	0	0	0	8	0
Jamaica	180	0	187	6	190	0
Gambia	180	0	195	0	180	0
Mogadore	140	0	170	0	125	0
East India..............	160	0	190	0	150	0
ditto, bleached	190	0	220	0	200	0
vegetable, Japan	66	0	88	6	65	0
WOOD, DYE, per ton						
Fustic, Cuba..........	150	0	170	0	170	0
Jamaica	105	0	110	0	110	0
Savanilla	120	0	130	0	120	0
Zante	0	0	0	0	0	0
Logwood, Campeachy	165	0	180	0	180	0
Honduras ..	100	0	105	0	100	0
St. Domingo	90	0	95	0	80	0
Jamaica	100	0	102	6	75	0